

Ecosystem Restoration Program - 2002 Proposal Solicitation Package (PSP): Form I - Project Information

All applicants must complete this form for their proposals. Failure to answer these questions will result in the application not being considered for funding.

1. Proposal Title:

Arundo Eradication and Coordination-Phase II

2. Proposal Applicants:

Sonoma Ecology Center for Team Arundo del Norte

3. Corresponding Contact Person:

Mark Newhouser
Sonoma Ecology Center
205 First St. W. Sonoma Ca 95476
707 996-0712 ext.103

4. Project Keywords:

**Non-Native Invasive Species
Riparian Ecology
Watershed Management**

5. Type of project:

Implementation_Full

6. Does the project involve land acquisition, either in fee or through a conservation easement?

No

7. Topic Area:

Non-Native Invasive Species

8. Type of applicant:

Private non-profit

9. Location – GIS coordinates

Cache Creek

Latitude: 39° 9' N

Longitude: 123° 12' W

Graylodge Wildlife Area

Latitude: 39° 20' N

Longitude: 121° 50' W

Lindo Channel

Latitude: 39° 48' N

Longitude: 121° 51' W

Napa River

Latitude: 38° 13' N

Longitude: 122° 17' W

Putah Creek

Latitude: 38° 38' N

Longitude: 121° 56' W

Lower American River

Latitude: 38° 31' N

Longitude: 121° 31' W

SanFrancisquito Creek

Latitude: 37° 22' N

Longitude: 121° 56' W

San Joaquin River

Latitude: 36° 46' N

Longitude: 119° 43' W

Sonoma Creek

Latitude: 38° 30' N

Longitude: 122° 48' W

Walnut Creek

Latitude: 37° 58' N

Longitude: 121° 59' N

Describe project location using information such as water bodies, river miles, road intersections, landmarks, and size in acres.

Walnut Creek, Sonoma Creek, Napa River, San Francisquito Creek, Putah Creek, Cache Creek, Lindo Channel, San Joaquin River, Cottonwood Creek, Ash Slough, Lower American River, and Gray Lodge Wildlife Area. (see attachment C) Approximately 313 acres of *Arundo donax* on over 70 miles of rivers and creeks is identified for eradication under this proposal.

10. Location – Ecozone

5.1 Upper Cottonwood Creek, 7.7 Butte Sink, Butte Basin-Chico, 9.2 Lower American River, 10.1 Cache Creek, 10.2 Putah Creek, 12.4 Gravelly Ford to Friant Dam, West San Joaquin Basin, 2.1 Suisun Bay & Marsh, 2.2 Napa River, 2.3 Sonoma Creek, 7.7 Lindo Channel, Code 15: Landscape

11. Location – County

Butte, Contra Costa, Fresno, Lake, Madera, Merced, Napa, Sacramento, San Mateo, Santa Clara, Solano, Sonoma, Yolo

12. Location – City. Does your project fall within a city jurisdiction?

Yes

13. If yes, please list the city:

Walnut Creek, Calistoga, Chowchilla, Palo Alto, Fresno, Madera, Dos Palos, Los Banos, Clear Lake, Lakeport, Chico

14. Location – Tribal Lands. Does your project fall on or adjacent to tribal lands?

Yes

Big Valley Rancheria, Blue Lake Rancheria, Elem Pomo Tribe, Habematolel Pomo Upper Lake, Middletown Rancheria, Robinson Rancheria Band of Pomo Indians, Scotts Valley

15. Location – Congressional District.

1, 2, 3, 5, 6, 18, 19, 21 and more to be determined.

16. Location – California State Senate District & California Assembly District

California State Senate District Number: 2, 4, 5, 6, 12, 14, 16, 32 and more to be determined.
California Assembly District Number: 1, 3, 5, 7, 9, 10, 14, 25, 29, 30 and more to be determined.

17. How many years of funding are you requesting?

3 but need 5 for adequate monitoring.

18. Requested Funds:

a. Are your overhead rates different depending on whether funds are state or federal?

No

b. If yes, list the different overhead rates and total requested funds.

c. If no, list single overhead rate and total requested funds.

Single Overhead Rate: 15.5%

Total Requested Funds: \$1,960,834

d. Do you have cost share partners already identified?

Yes

If yes, list partners and amount contributed by each.

American River/CNPS grants \$100K + Volunteer labor \$180K	\$140,575
Cache Creek/NRCS \$900, Lake County CRMP \$10,410, WMA SB 1740 \$59,779, F.C. zone 1& 8 \$5,901	\$76,990
San Joaquin River/USBR	\$75,000
Gray Lodge Wildlife Area/CDFG \$2420, Jones Flying Service \$5200	\$29,220
Cottonwood Creek/NRCS	\$21730
Lindo Channel/ City of Chico	\$66,200
Information Center for the Environment/CERES	\$10,000
USDA, ARS Exotic and Invasive Weed Research Unit	\$58,800

e. Do you have potential cost share partners?

Yes

If yes, list partners and amount contributed by each.

Cottonwood Creek/ Madera County	\$42,176
San Joaquin River/S.J. Conservation Trust	\$35,000
Sonoma State University/ Geographic Information Center	\$10,000
CERES	\$10,000
All the above confirmed for a total of:	\$575, 691

f. Are you specifically seeking non-federal cost share funds through this solicitation?

No

If yes, list total non-federal funds requested.

g. If the total non-federal cost share funds requested above does not match the total state funds requested in 19a, please explain the difference.

19. Is this proposal for next-phase funding of an ongoing project funded by CALFED?

Yes

If yes, identify project number(s), title(s) and CALFED program.

113320J033 Arundo donax Eradication and Coordination ERP

20. Have you previously received funding from CALFED for other projects not listed above?

No

If yes, identify project number(s), title, and CALFED program.

21. Is this proposal for next-phase funding of an ongoing project funded by CVPIA?

No

If yes, identify project number(s), title, and CVPIA program.

22. Have you previously received funding from CVPIA for other projects not listed above?

No

23. Is this proposal for next-phase of an ongoing project funded by an entity other than CALFED or CVPIA?

No

If yes, identify project number(s), title, and funding source.

24. Please list suggested reviewers for your proposal. (optional)

<u>Name</u>	<u>Organization</u>	<u>Phone</u>	<u>Email</u>
Steve Schoenig	CDFA	916-654-0768	sschoenig@cdfa.ca.org
Jan Lowery	Cache Creek Conservancy	530-661-1070	cacheck@cal.net
Tom Dudley	UC Berkeley	775-784-7724	tdudley@cabnr.unr.edu
Joel Trumbo	Ca.Dept. of Fish & Game, Pesticide Investigation Unit	916-358-3952	jtrumbo@ospr.dfg.ca.gov
Karen Gaffney	Circuit Riders Productions	707-838-6641, ext.216	kgaffney@crpinc.org

25. Comments.

This is the second phase of a fully funded NIS eradication project that covers a broad geographic area. The total area, including the planned expansion, includes 11 watersheds in 13 counties.

Ecosystem Restoration Program - 2002 Proposal Solicitation Package (PSP): Form II – Executive Summary

Arundo donax Eradication and Coordination: Phase II A Program of Team Arundo del Norte

This proposal represents the planned expansion (Phase 2) of the current CBDA-funded *Arundo donax* Eradication and Coordination Program. This program is sponsored by Team Arundo del Norte (TAdN), a network of local, state, and federal organizations dedicated to the eradication of *Arundo donax* (Arundo, giant cane), a non-native invasive species that threatens riparian and aquatic habitat in Central and Northern California through native plant displacement, stream channel degradation, increased flood and fire risk, and increased water use. The applicant is the Sonoma Ecology Center, founding member of TAdN.

This is a full-scale restoration project, developing a coordinated program to control Arundo in the CBDA region and eliminate further invasion impacts. The program improves ecosystem health, water supply, and water quality.

The program takes a coordinated regional approach that centralizes many aspects of invasive species control and promotes partnerships among local organizations and agencies. It oversees the methods and progress of partners' effort, reducing the need for CBDA to administer numerous individual projects. This approach is cost-effective and prevents redundant work by providing partners with customized resources, techniques, and training for all aspects of start-up and implementation of an Arundo control program. Standardized data collected as partners treat and monitor Arundo infestations is allowing the construction of a single body of information for analysis across efforts.

Although much is already known about the plant's invasion dynamics and general eradication methods, there is a need to refine this information and apply it in an adaptive program to the ongoing management of the weed. This program will contribute to the current body of knowledge about the problem and solutions to *Arundo donax* as it implements the best practices to date.

The program is testing four hypotheses. They are:

1. The eradication techniques used effectively eliminate Arundo infestations.
2. Native riparian vegetation increases after Arundo removal.
3. Stream channel capacity increases at Arundo removal sites.
4. Many eradication sites will revegetate on their own.

Through TAdN's network of watershed groups, agencies, and universities, information gathered on Arundo's distribution patterns, ecological impacts, and eradication methods continue to be widely and immediately useful. The education and outreach component of

the program maintains the TAdN website that offers a large digital library of Arundo-related materials to stakeholders throughout California.

In Phase I of the program, 5 partners initiated Arundo eradication projects in their watersheds. They prepared eradication plans, conducted site surveys, obtained permits and landowner access, and began eradication work—all with the support of program staff. The program developed an Arundo survey and monitoring protocol, and trained partners in its use. It developed a digital library, listserv, and other reference information, and prepared and disseminated Arundo educational materials as part of the TAdN website for program partners, agencies, and other stakeholders.

In Phase II, the program will initiate eradication projects in 6 additional watersheds (for a total of 11 projects in 13 counties), expand current eradication areas, and extend the time for adequate monitoring. The new sites are on Cache Creek, the San Joaquin River, Lindo Channel, the American River, Ash Slough (a tributary of the Chowchilla River), Cottonwood Creek, and the Gray Lodge State Wildlife Area. Current partners will continue work on Sonoma Creek, Walnut Creek, Napa River, Putah Creek, and San Francisquito Creek. The program will continue to provide advice, permitting assistance, quality assurance, and coordination to emerging eradication efforts as well as to current ones. Other key components in Phase II include:

Level 1: Upgrade the data management system.

Level 2: Create a regional Arundo distribution map and eradication prioritization model and map. Expand the dossier of potential partners and stakeholders.

Level 3; Test program hypotheses.

Level 4: Obtain programmatic environmental compliance for all eradication projects that use the program's protocols.

Level 5: Identify and train regionally-based eradication equipment operators.

The proposal may be funded at any of 5 levels. The levels are cumulative, each building on the previous levels. The cost for three years of Phase 2 funding at level 5 for eradication, technical coordination, monitoring, planning, and dissemination of Arundo-related information is \$1,961,171. This cost is matched by \$575,691 in in-kind contributions.

Ecosystem Restoration Program - 2002 Proposal Solicitation Package (PSP): Form III - Environmental Compliance Checklist

All applicants must complete this form for their proposals. Failure to answer these questions will result in the application not being considered for funding.

Successful applicants are responsible for complying with all applicable laws and regulations for their projects, including the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA).

Any necessary NEPA or CEQA documents for an approved project must tier from the CALFED [Programmatic Record of Decision](#) and Programmatic EIS/EIR to avoid or minimize the projects adverse environmental impacts. Applicants are encouraged to review the [Programmatic EIS/EIR](#) and incorporate the applicable mitigation strategies from Appendix A of the Programmatic Record of Decision in developing their projects and the NEPA/CEQA documents for their projects.

1. CEQA or NEPA Compliance

- a. Will this project require compliance with CEQA?

Yes

- b. Will this project require compliance with NEPA?

Yes

If neither CEQA or NEPA compliance is required, please explain why compliance is not required for the actions in this proposal.

- 2. If the project will require CEQA and/or NEPA compliance, identify the lead agency(ies). Please write out all words in the agency title other than United States (use the abbreviation US) or California (use the abbreviation CA). If not applicable, put None.**

CEQA Lead Agency: CA Department of Fish and Game

NEPA Lead Agency (or co-lead:) US Fish and Wildlife Service

NEPA Co-Lead Agency (if applicable):

- 3. Please check which type of CEQA/NEPA documentation is anticipated.**

CEQA



XXX Categorical Exemption



Negative Declaration or Mitigated Negative Declaration



EIR

NEPA

- XXX Categorical Exclusion**
- XXX Environmental Assessment/FONSI**
- EIS

If you anticipate relying on either the Categorical Exemption or Categorical Exclusion for this project, please specifically identify the exemption and/or exclusion that you believe covers this project.

Categorical Exemption (Class 1:15301; Class 4: 15304)

NIS vegetation removal, stream flow maintenance

CEQA/NEPA Process

- a. Is the CEQA/NEPA process complete?

No
- b. If the CEQA/NEPA process is not complete, please describe the dates for completing draft and/or final CEQA/NEPA documents.

6 months following contract acquisition.
- c. If the CEQA/NEPA document has been completed, please list document name(s):

4. Environmental Permitting and Approvals

Successful applicants must tier their project's permitting from the CALFED Record of Decision and attachments providing programmatic guidance on complying with the state and federal endangered species acts, the Coastal Zone Management Act, and sections 404 and 401 of the Clean Water Act. The CALFED Program will provide assistance with project permitting through its newly established permit clearing house.

Please indicate what permits or other approvals may be required for the activities contained in your proposal and also which have already been obtained. Please check all that apply. If a permit is *not* required, leave both Required? and Obtained? check boxes blank.

LOCAL PERMITS AND APPROVALS

Conditional use permit

Variance

Subdivision Map Act

Grading Permit

General Plan Amendment

Specific Plan Approval

Rezone

Williamson Act Contract Cancellation

Other

STATE PERMITS AND APPROVALS

Scientific Collecting Permit

CESA Compliance: 2081

CESA Compliance: NCCP

1601/03

Required

CWA 401 certification

Required, for certain conditions and methods

Coastal Development Permit

Reclamation Board Approval

Maybe

Notification of DPC or BCDC

Other

FEDERAL PERMITS AND APPROVALS

ESA Compliance Section 7 Consultation

ESA Compliance Section 10 Permit

Rivers and Harbors Act

CWA 404

Required, for certain conditions and methods

Other

PERMISSION TO ACCESS PROPERTY

Permission to access city, county or other local agency land.

Agency Name: City of Chico, City of Madera, City of Chowchilla, City of Sacramento, City of Napa, City of San Mateo, Lake County Flood Control and Water Conservation District, American River Flood Control District, Napa County Flood Control District, Contra Costa County Flood Control District, Butte

County Agriculture Commission, Sacramento County Parks Department, Madera County Public Works, Solano County Water Agency, Sonoma County Water Agency, San Joaquin River Parkway Trust Inc.

Permission to access state land.

Agency Name: CA Department of Fish and Game

Permission to access federal land.

Agency Name: Bureau of Reclamation

Permission to access private land.

Landowner Name:

Comments. If you have comments on any of the above questions, please enter the question number followed by a specific comment.

#4. Many of the new partners in this project have standing jurisdiction in waterways and existing maintenance and weed management programs. With the exception of a few private property owners, most eradication work will be done on lands owned or controlled by project partners.

Ecosystem Restoration Program - 2002 Proposal Solicitation Package (PSP): Form IV - Land Use Checklist

All applicants must complete this form for their proposals. Failure to answer these questions will result in the application not being considered for funding.

1. Does the project involve land acquisition, either in fee or through a conservation easement?

No

2. If you answered yes to #1, please answer the following questions:

a. How many acres will be acquired?

b. Will existing water rights be acquired?

c. Are any changes to water rights or delivery of water proposed?

d. If yes, please describe proposed changes.

e. Will the applicant require access across public or private property that the applicant does not own to accomplish the activities in the proposal?

Yes

3. Do the actions in the proposal involve physical changes in the land use?

No

4. If you answered no to #3, explain what type of actions are involved in the proposal (i.e., research only, planning only).

Non-native plant eradication only

5. If you answered yes to #3, please answer the following questions:

a. How many acres of land will be subject to a land use change under the proposal?

b. Describe what changes will occur on the land involved in the proposal.

c. List current and proposed land use, zoning and general plan designations of the area subject to a land use change under the proposal.

d. Is the land currently under a Williamson Act contract? (For multiple sites, answer Yes if true for any parcel, and provide an explanation in the Comments box below)

e. Is the land mapped as Prime Farmland, Farmland of Statewide Importance, Unique Farmland or Farmland of Local Importance under the California Department of Conservation's Farmland Mapping and Monitoring Program? For more information, contact the California Department of Conservation, Division of Land Resource Protection, Farmland Mapping and Monitoring Program (<http://www.consrv.ca.gov/dlrp/FMMP/index.htm>). (For multiple sites, answer Yes if true for any parcel, and provide an explanation in the Comments box below)

f. If yes, please list classification:

g. Describe what entity or organization will manage the property and provide operations and maintenance services.

6. Comments.

Most access is through lands owned or in the jurisdiction of the listed managers and partners.

Ecosystem Restoration Program - 2002 Proposal Solicitation Package (PSP): Form V - Conflict of Interest Checklist

All applicants must complete this form for their proposals. Failure to answer these questions will result in the application not being considered for funding.

You may update your information at any time. The [update proposal] button is located at the bottom of this form.

Please list below the full names and organizations of all individuals in the following categories:

- Applicants listed in the proposal who wrote the proposal, will be performing the tasks listed in the proposal or who will benefit financially if the proposal is funded.
- Subcontractors listed in the proposal who will perform some tasks listed in the proposal and will benefit financially if the proposal is funded.
- Individuals not listed in the proposal who helped with proposal development, for example by reviewing drafts, or by providing critical suggestions or ideas contained within the proposal.

The information provided on this form will be used to select appropriate and unbiased reviewers for your proposal.

Applicant(s):

Sonoma Ecology Center for Team Arundo del Norte

Subcontractor(s):

Are specific subcontractors identified in this proposal?

Yes

If yes, please list the name(s) and organization(s):

Deanne Dipietro, Technical Consultant

Karen Willet, Information Center for the Environment (ICE)

Ron Unger, EDAW

David Spencer, USDA ARS Exotic and Invasive Weed Research Unit

Helped with proposal development

Are there persons who helped with proposal development?

Yes

If yes, please list the name(s) and organization(s):

Richard Dale, Sonoma Ecology Center

Caitlin Cornwall, Sonoma Ecology Center

Mark Newhouser, Sonoma Ecology Center

Bob Hass, Sonoma Ecology Center

Tracy Enhelder, Sonoma Ecology Center

Deanne DiPietro, Sonoma State University

Ron Unger, EDAW

Davis Spencer, USDA ARS

Comments:

Ecosystem Restoration Program - 2002 Proposal Solicitation Package (PSP)

Form VI - Project Information

YEAR ONE											
Task	Direct Labor						Other		Total		Total Cost
	Hours	Salary	Benefits	Travel	Supplies	Services	Equip't	Direct Costs	Direct Costs	Indirect Costs	
Eradication and Monitoring											
1 Napa River						7,400					
2 San Francisquito Creek						6,671					
3 Sonoma Creek						10,467					
5 Putah Creek						32,842					
6 Walnut Creek						10,302					
9 American River						26,234					
10 Cottonwood Creek/Ash Slough						72,391					
11 Cache Creek						75,229					
12 Gray Lodge Wildlife Area						10,633					
13 San Joaquin River						22,500					
14 Lindo Channel						<u>55,543</u>					
					Eradication Subtotal	330,211	0	0	330,211	0	330,211
7 Project Coordination	2,080	60,000	13,200	2,387	8,640	0	0	1,400	85,627	9,300	94,927
8 Data Coordination	2,080	55,000	12,100	1,055	1,670	35,007	0	900	105,732	8,525	114,257
LEVEL ONE TOTAL	4,160	115,000	25,300	3,442	10,310	365,218	0	2,300	521,570	17,825	539,395
LEVEL TWO <i>Level One costs plus</i>											
15 Mapping	1,560	33,000	7,260	0	15,960	0	30,000	1,900	88,120	5,115	93,235
LEVEL TWO TOTAL	5,720	148,000	32,560	3,442	26,270	365,218	30,000	4,200	609,690	22,940	632,630
LEVEL THREE <i>Level Two costs plus</i>											
16 Experim'l Design & Monit	80	2,115	465	648	0	70,352	0	0	73,581	328	73,909
LEVEL THREE TOTAL	5,800	150,115	33,025	4,090	26,270	435,570	30,000	4,200	683,270	23,268	706,538
LEVEL FOUR <i>Level Three costs plus</i>											
17 Programmatic Permitting	80	2,115	465	108	0	59,000	0	0	61,689	328	62,017
LEVEL FOUR TOTAL	5,880	152,231	33,491	4,198	26,270	494,570	30,000	4,200	744,959	23,596	768,555
LEVEL FIVE <i>Level Five costs plus</i>											
18 Equipment & Training	48	1,269	279	486	0	30,000	75,000	0	107,034	197	107,231
LEVEL FIVE TOTAL	5,928	153,500	33,770	4,684	26,270	524,570	105,000	4,200	851,994	23,793	875,786

Note: indirect costs are independent of funding source. Task numbers 1-8 are consistent with task numbers from Phase I.

YEAR TWO											
Task	Direct Labor						Equip't	Other Direct Costs	Total		Total Cost
	Hours	Salary	Benefits	Travel	Supplies	Services			Direct Costs	Indirect Costs	
Eradication and Monitoring											
1 Napa River						7,400					
2 San Francisquito Creek						6,671					
3 Sonoma Creek						10,467					
5 Putah Creek						32,842					
6 Walnut Creek						10,302					
9 American River						5,550					
10 Cottonwood Creek/Ash Slough						5,478					
11 Cache Creek						29,444					
12 Gray Lodge Wildlife Area						8,331					
13 San Joaquin River						40,000					
14 Lindo Channel						55,543					
					Eradication Subtotal	212,027	0	0	212,027	0	212,027
7 Project Coordination	2,080	60,000	13,200	2,369	1,040	0	0	1,400	78,009	9,300	87,309
8 Data Coordination	2,080	55,000	12,100	1,055	4,570	0	0	900	73,625	8,525	82,150
LEVEL ONE TOTAL	4,160	115,000	25,300	3,424	5,610	212,027	0	2,300	363,661	17,825	381,486
LEVEL TWO <i>Level One costs plus</i>											
15 Mapping	1,560	33,000	7,260	0	2,970	0	0	1,900	45,130	5,115	50,245
LEVEL TWO TOTAL	5,720	148,000	32,560	3,424	8,580	212,027	0	4,200	408,791	22,940	431,731
LEVEL THREE <i>Level Two costs plus</i>											
16 Experim'l Design & Monit	80	2,115	465	315	0	70,352	0	0	73,248	328	73,576
LEVEL THREE TOTAL	5,800	150,115	33,025	3,739	8,580	282,379	0	4,200	482,039	23,268	505,307
LEVEL FOUR <i>Level Three costs plus</i>											
17 Programmatic Permitting	80	2,115	465	95	0	59,000	0	0	61,676	328	62,004
LEVEL FOUR TOTAL	5,880	152,231	33,491	3,834	8,580	341,379	0	4,200	543,715	23,596	567,310
LEVEL FIVE <i>Level Five costs plus</i>											
18 Equipment & Training	48	1,269	279	158	0	0	0	0	1,706	197	1,903
LEVEL FIVE TOTAL	5,928	153,500	33,770	3,991	8,580	341,379	0	4,200	545,421	23,793	569,213

YEAR THREE											
Task	Direct Labor						Equip't	Other Direct Costs	Total		Total Cost
	Hours	Salary	Benefits	Travel	Supplies	Services			Direct Costs	Indirect Costs	
Eradication & Monitoring											
9 American River						22,483					
10 Cottonwood Creek/Ash Slough						5,478					
11 Cache Creek						30,662					
12 Gray Lodge Wildlife Area						6,909					
13 San Joaquin River						45,000					
14 Lindo Channel						<u>55,542</u>					
						Eradication Subtotal	0	0	166,074	0	166,074
7 Project Coordination	2,080	60,000	13,200	2,369	1,040	0	0	0	76,609	9,300	85,909
8 Data Coordination	2,080	55,000	12,100	1,055	1,170	0	0	0	69,325	8,525	77,850
LEVEL ONE TOTAL	4,160	115,000	25,300	3,424	2,210	166,074	0	0	312,008	17,825	329,833
LEVEL TWO <i>Level One costs plus</i>											
15 Mapping	1,560	33,000	7,260	875	2,270		0	0	43,405	5,115	48,520
LEVEL TWO TOTAL	5,720	148,000	32,560	4,299	4,480	166,074	0	0	355,413	22,940	378,353
LEVEL THREE <i>Level Two costs plus</i>											
16 Experim'l Design & Monit	80	2,115	465	315	0	70,352	0	0	73,248	328	73,576
LEVEL THREE TOTAL	5,800	150,115	33,025	4,614	4,480	236,426	0	0	428,660	23,268	451,928
LEVEL FOUR <i>Level Three costs plus</i>											
17 Programmatic Permitting	80	2,115	465	95	0	59,000	0	0	61,676	328	62,004
LEVEL FOUR TOTAL	5,880	152,231	33,491	4,709	4,480	295,426	0	0	490,336	23,596	513,932
LEVEL FIVE <i>Level Five costs plus</i>											
18 Equipment & Training	48	1,269	279	158	0	0	0	0	1,706	197	1,903
LEVEL FIVE TOTAL	5,928	153,500	33,770	4,866	4,480	295,426	0	0	492,042	23,793	515,835
THREE-YEAR TOTALS	<u>LEVEL ONE</u>	<u>LEVEL TWO</u>	<u>LEVEL THREE</u>	<u>LEVEL FOUR</u>	<u>LEVEL FIVE</u>						
	\$1,250,713	\$1,442,713	\$1,663,773	\$1,849,797	\$1,960,834						

**Ecosystem Restoration Program - 2002 Proposal Solicitation Package (PSP):
Form VII - Budget Justification**

All applicants must complete this form for their proposals. Failure to answer these questions will result in the application not being considered for funding.

Direct Labor Hours. Provide estimated hours proposed for each individual.

Project Manager/Level One– (2,080 hours per year, 3 years) 6,240 hours; Data Coordinator/Level One– (2,080 hours per year, 3 years) 6,240 hours; Geographic Technician/Level Two– (1,560 hours per year, 3 years) 4,680 hours; Task Supervisor/Levels Three, Four, Five– (208 hours/year, 3 years) 624 hours

Salary. Provide estimated rate of compensation proposed for each individual.

Project Manager/Level One– \$28.85/hr; Data Coordinator/Level One– \$26.44/hr; Geographic Technician/Level Two– \$21.15/hr; Task Supervisor/Levels Three, Four, Five– \$26.44

Benefits. Provide the overall benefit rate applicable to each category of employee proposed in the project.

Project Manager, Data Coordinator, Geographic Technician, Task Supervisor– Benefits calculated at 22%

Travel. Provide purpose and estimate costs for all non-local travel.

All mileage calculated at \$0.36/mile

Level One/PrgMgr/Yr1: 33 partner site visits ~ 150 miles; 4 conferences ~ 200 miles; 4 partner quarterly meetings ~ 140 miles; 2 agency/CBDA meetings ~ 160 miles: \$2,387

Level One/PrgMgr/Yr2: 22 partner site visits ~ 150 miles; 4 conferences ~ 200 miles; 8 potential partner visits ~ 200 miles; 4 partner quarterly meetings ~ 140 miles; 2 agency/CBDA meetings ~ 160 miles: \$2,369

Level One/PrgMgr/Yr3: 22 partner site visits ~ 150 miles; 4 conferences ~ 200 miles; 8 potential partner visits ~ 200 miles; 4 partner quarterly meetings ~ 140 miles; 2 agency/CBDA meetings ~ 160 miles: \$2,369

Level One/DataCoord/Yr1: 11 partner site visits ~150 miles; 2 conferences ~ 200 miles; 4 partner quarterly meetings ~ 140 miles; 2 agency/CBDA meetings ~ 160 miles: \$1,055

Level One/DataCoord/Yr2: 11 partner site visits ~150 miles; 2 conferences ~ 200 miles; 4 partner quarterly meetings ~ 140 miles; 2 agency/CBDA meetings ~ 160 miles: \$1,055

Level One/DataCoord/Yr3: 11 partner site visits ~150 miles; 2 conferences ~ 200 miles; 4 partner quarterly meetings ~ 140 miles; 2 agency/CBDA meetings ~ 160 miles: \$1,055

Levels Three, Four, Five/Task Supervisor/Yr1: 25 site visits ~ 150 miles; \$1,242

Levels Three, Four, Five/Task Supervisor/Yr2: 25 site visits ~ 150 miles; \$1,242

Levels Three, Four, Five/Task Supervisor/Yr3: 25 site visits ~ 150 miles; \$1,242

Supplies & Expendables. Indicate separately the amounts proposed for office, laboratory, computing, and field supplies.

Level One/PrgMgr/Yr1: (computing) portable computer and service contract: \$2,900; software: \$1,000; video projector: \$2,400; (field) cell phone plan 45/mo: \$540; (office) supplies: \$400
Total: \$8,640

Level One/PrgMgr/Yr2: (field) cell phone plan 45/mo: \$540; (office) supplies: \$500 Total: \$1,040

Level One/PrgMgr/Yr3: (field) cell phone plan 45/mo: \$540; (office) supplies: \$500 Total: \$1,040

Level One/Data Coord/Yr1: (computing) software \$500; (field) cell phone plan 35/mo \$420; (office) supplies: \$250 Total: \$1170

Level One/Data Coord/Yr2: (computing) portable computer and service contract: \$2,900; software: \$1,000; (field) cell phone plan 35/mo: \$420; (office) supplies: \$250 Total: \$4,570

Level One/Data Coord/Yr3: (computing) software \$500; (field) cell phone plan 35/mo \$420; (office) supplies: \$250 Total: \$1,170

Level Two/Geogr Tech/Yr1: (computing) data acquisition \$5,000; ArcMap license \$1,000; portable computer and service contract \$2900; (field) camera: \$500; cell phone use 35/mo \$420; Geoplotter III unit or equiv. GPS unit \$5,000; fuel: 10,000 miles, 25mpg, 1.75/gal: \$700; (office) supplies 500 Total: \$15,960

Level Two/Geogr Tech/Yr2: (computing) ArcMap license \$1000; (field) cell phone use 35/mo \$420; fuel: 15,000 miles, 25mpg, 1.75/gal, \$1,050; (office) supplies \$500 Total: \$2,970

Level Two/Geogr Tech/Yr3: (computing) ArcMap license \$1000; (field) cell phone use 35/mo \$420; fuel: 5,000 miles, 25mpg, 1.75/gal, \$350; (office) supplies \$500 Total: \$2,270

Services or Consultants. Identify the specific tasks for which these services would be used. Estimate amount of time required and the hourly or daily rate.

All new subcontractors (eradication partners, research team, and programmatic permit lead) have submitted very detailed budgets and budget justifications. These are shown in attachment E. An exception is Level One, year 1, Task 8, Data Coordination: Information Center for the Environment (ICE) \$35,007. This fee will be used to finalize database development and to add editing querying functionality to this statewide database. Labor positions, hours, and rates include: Database designer, 750 hours, 26.62/hr, \$19,965; Web Specialist, 275 hours, 36.62/hr, \$10,070.50; Project manager, 125 hours, 39.77 hours, \$4,971.25. Total \$35,006.75

Current partners will conduct monitoring tasks, as follows:

Task 1, Napa River, Vegetation Manager, \$34.82/hr, 415 hours over 2 years, Total: \$14,800.

Task 2, San Francisquito Creek, Vegetation Manager, \$30.25/hr, 415 hours over 2 years, \$12,553.75. Travel, 400 miles, \$0.36/mi, \$144/yr over 2 years, \$288. Supplies, \$250/yr. over 2 years, \$500. Total: \$13,341.

Task 3, Sonoma Creek, Vegetation Manager, \$23.10/hr, 840 hours over 2 years, \$19,404. Travel, 750 miles, \$0.36/mi, \$270/yr for 2 years, \$540. Supplies, \$250/yr for 2 years, \$500. Total: \$20,394.

Task 4, Putah Creek, Streamkeeper, \$34.57/hr, 1900 hours over 2 years, Total \$65,683.

Task 5, Walnut Creek, Student Monitor, \$25.95/hr, 710 hours over 2 years, \$18,424.50. Senior Vegetation Manager/Specialist, \$108.97/hour, 20 hours over 2 years, \$2,179.40. Total: \$20,603.90.

Equipment. Identify non-expendable personal property having a useful life of more than one (1) year and an acquisition cost of more than \$5,000 per unit. If fabrication of equipment is proposed, list parts and materials required for each, and show costs separately from the other items.

Level 2, year 1 includes purchase of an all wheel drive light SUV-type vehicle for use by geographic technician and field and partner site visits by project staff. The program requires over 40,000 miles of travel, often to remote sites. \$30,000.

Level 5, year 1 includes purchase of 3 flail mower attachment units to mount to existing partner tractor equipment. Each unit costs \$25,000.

Project Management. Describe the specific costs associated with insuring accomplishment of a specific project, such as inspection of work in progress, validation of costs, report preparation, giving presentations, response to project specific questions and necessary costs directly associated with specific project oversight.

Project management tasks will be accomplished by program staff, largely by Project Manager. These activities are described in detail in the proposal text. Costs for these tasks are included in task line items, not in a separate program management line.

Other Direct Costs. Provide any other direct costs not already covered.

Level One/ProjMgr/Yrs1-3: conferences: \$1,400/year: Total: \$4,200

Level One DataCoord/Yrs1-3 conferences: \$900/year: Total: \$2,700

Level Two Geographic Technician/Yrs 1-3 conferences \$1,900/year: Total: \$5,700

Indirect Costs. Explain what is encompassed in the overhead rate (indirect costs). Overhead should include costs associated with general office requirements such as rent, phones, furniture, general office staff, etc., generally distributed by a predetermined percentage (or surcharge) of specific costs. *[CORRECTION: If overhead costs are different for State and Federal funds, note*

the different overhead rates and corresponding total requested funds on Form I - Project Information, Question 17a. On Form VI - Budget Summary, fill out one detailed budget for each year of requested funds, indicating on the form whether you are presenting the indirect costs based on the Federal overhead rate or State overhead rate. Our assumption is that line items other than indirect costs will remain the same whether funds come from State or Federal sources. If this assumption is not true for your budget, provide an explanation on the Budget Justification form.]
Agencies should include any internal costs associated with the management of project funds.

Indirect costs (\$71,379) include the following: Accounting/clerical: \$6,300/yr; Management: \$6,000/yr; Rent, utilities, insurance, phones, copies: \$6,093/yr; Computer services: \$5,400/yr
Total \$23,793/yr; \$71,379/project period

***Arundo donax* Eradication and Coordination Program—Phase 2
A Project of Team Arundo del Norte**

**CALFED Proposal, October 2001
(Revised and resubmitted to CBDA as a Directed Action, December 2003)**

A. PROJECT DESCRIPTION: PROJECT GOALS AND SCOPE OF WORK
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1. PROBLEM, GOALS, OBJECTIVES, AND HYPOTHESES

The non-native invasive species *Arundo donax* (Arundo, giant cane) threatens the ecological integrity of the rivers and streams throughout the California Bay Delta Authority (CBDA) region by altering ecosystem processes and negatively impacting native species. Arundo has established itself as a climax species in several river ecosystems, including the Santa Ana River and the Santa Margarita River in Southern California. This plant is currently demonstrating its ability to take over riparian habitat in several Northern California waterways, as exemplified by its increasing acreage in the Sacramento and San Joaquin river systems as well as in many smaller streams in the CBDA region.

Arundo ultimately destroys riparian woody canopy through fire. The fire-adapted Arundo burns even when green and its tall canes carry the fire into the canopy of adjacent riparian trees. While the fire generally destroys the native trees, the Arundo resprouts from fire-resistant rhizomes. With its competition now gone, Arundo then emerges as a monoculture. Arundo also alters stream flow and geomorphology. It grows readily on gravel bars and in the streambed, changing flow regimes and directing erosive flows to opposite banks. The flows undercut and destabilize stream banks, causing tree loss, property damage, and siltation. The silt impairs fish spawning grounds.

By growing in the active stream channel, Arundo can reduce the hydrologic capacity of a waterway and increase the potential for flooding. The shallow, interwoven roots of Arundo break off in large rhizomatous mats that wash away, forming dams, clogging culverts, and causing flooding downstream. Arundo's destruction of overhanging canopy vegetation allows for greater solar exposure of surface water, resulting in potentially lethal temperatures for steelhead and salmon. Avian and terrestrial species also lose nesting and foraging habitat. Due to these multiple effects, an Arundo-infested riparian area can no longer support its original diversity of native wildlife species.

Arundo donax is widely recognized as highly invasive and damaging. (For a general description of *Arundo donax*, see the CalFlora Database: <http://www.calflora.org>). Arundo is now officially listed by the USDA as a noxious weed and rated as A-1 (Most Invasive Wildland Pest Plant) by the California Invasive Plant Council (Cal-IPC). Cal-IPC's A-1 designation is reserved for plants documented as being aggressive invaders that displace natives and disrupt natural habitats, and that are widespread in more than three *Jepson Manual* geographic subdivisions. This species has also been nominated as among 100 of the "World's Worst" invaders in the Global Invasive Species Database (<http://www.issg.org>). Arundo's effects on native systems and its modes of reproduction are well documented (Douce, 1993; Iverson, 1993; Dudley and Collins, 1995; Frandsen, 1993; Else, 1996; Bell, 1997; Trumbo, 1998; Boose and Holt, 1999; Gaffney, 2002). Team Arundo del Norte (TAdN) is based on lessons learned from the original Team Arundo of Southern California, which generated valuable information in its *Arundo donax* Workshop of 1993 and the resulting proceedings (Frandsen, et al, 1993). This work continues to guide Arundo control efforts and research, which TAdN has either participated in or closely followed (see G. References for a bibliography).

Goals

- To eradicate and control the invasive species *Arundo donax* through direct eradication in infested waterways in the CBDA region.
- To expand Team Arundo del Norte's regional approach to coordinating Arundo control projects in the CBDA area through a network of organizations, expertise, information-sharing, educational materials, and standardized mapping, surveying, and monitoring protocols.
- To restore riparian and aquatic habitat impacted by Arundo and provide for its ongoing control to prevent new invasion threats to riparian ecosystems.

Objectives

Eradication and Coordination

- Coordinate the management of Arundo resources, information, and eradication activities to benefit program partners.
- Identify and foster potential new eradication partners.
- Promote local involvement and coordinated eradication efforts.
- Support the development within local agencies of increased responsibility and capacity for controlling invasive weeds.
- Train and assist stakeholders with planning, surveying, funding, permitting, eradication, and monitoring.
- Provide templates for project planning, surveying, and monitoring. Oversee Arundo eradication, monitoring, and habitat restoration and provide quality assurance.
- Provide specialized training and mowing and mulching equipment to three regionally based operators.

Experimental Design and Monitoring

- Collect and manage data on Arundo infestations, surveys, treatment, monitoring, and overall eradication success.
- Scientifically test hypotheses on the effectiveness of eradication and restoration efforts.

Mapping

- Assemble maps and location data to create a regional map of Arundo infestations.
- Prioritize eradication sites throughout the Northern California region based on Arundo's threat to sensitive species and restorable habitats, and level of local support.
- Develop a regional eradication strategy that effectively directs resources to priority projects and recommendations for implementation.

Education and Information Clearinghouse

- Apply new technology to assist eradication efforts.
- Maintain and expand online information clearinghouse (listserv, website).
- Disseminate Arundo-related educational information.

Hypotheses

1. The eradication techniques used effectively eliminate Arundo infestations.
2. Native riparian vegetation increases after Arundo removal.
3. Stream channel capacity increases at Arundo removal sites.

4. Many eradication sites will revegetate on their own.

2. JUSTIFICATION

Conceptual Model

State of Knowledge to Date:

This project is based on the understanding that *Arundo* invasion severely degrades riparian and aquatic habitats (Douce, 1993; Douthit, 1993; Bell 1997; Else, 1996), reproduces vegetatively and spreads downstream (Bell, 1997), impedes flood waters (Frandsen and Jackson, 1993), wastes water (Iverson, 1993), causes fire (Scott, 1993), and that eradication of *Arundo* through effective planning, control methods, and follow-up monitoring is possible (Omori, 1993; Jackson, 1993; Trumbo, 1999) and will reverse the decline in ecosystem health by allowing native plant and animal populations and water and sediment patterns to reestablish (Gaffney, 2002). The project is a necessary part of the overall effort to manage the riparian and aquatic resources of the San Francisco Estuary and its watershed. It addresses a major threat to ecosystem health, water availability for human and ecosystem use, and flood control. *Arundo* is present in huge stands in the estuary and its rivers, and spreading at an unknown, but undeniably alarming rate.

The organization Team *Arundo* del Norte and its work is based on lessons learned from the original Team *Arundo* of Southern California, which generated valuable information on the ecology of *Arundo* in its invaded range, its effect on California's native ecosystems, and eradication techniques in its *Arundo donax* Workshop of 1993 and the resulting proceedings (Frandsen, et al, 1993). This work continues to guide *Arundo* control efforts and research, which TAdN has either participated in or closely followed (see G. References for a bibliography).

Key Uncertainties:

Although there is a body of knowledge about *Arundo*'s effects and its control, there is much to learn to better support eradication decisions. More information is needed about the long-term effectiveness of control measures under a variety of timing scenarios and environmental conditions (Hypothesis 1: The eradication techniques used effectively eliminate *Arundo* infestations), as well as the ability of riparian habitat to restore itself after *Arundo* removal and knowing when to do active revegetation (Hypotheses 2: Native riparian vegetation increases after *Arundo* removal, and Hypothesis 3: Many eradication sites will revegetate on their own). More documentation about the effects of *Arundo* removal on a stream channel (Hypothesis 4: Stream channel capacity increases at *Arundo* removal sites) is needed for outreach and requests to landowners for access and support for eradication projects. Hypotheses stated in this proposal reflect those uncertainties identified by TAdN's large membership as important gaps in our understanding. A scientific team has designed a series of experiments to pursue answers to these uncertainties using traditional and statistically-defensible methods (see 3. Approach, Level 3). Another key uncertainty for the Bay-Delta region is the present distribution of *Arundo*. This proposal includes an effort to map the distribution of *Arundo* in the CBDA region (Level 2), which is essential for prioritizing the expenditure of eradication dollars. It will also provide a model for mapping other invasive species.

Project Type:

TAdN's previous CBDA project (Phase 1) was a pilot program of coordinated eradication of *Arundo* in five watersheds. This proposal is a full-scale restoration program. Our model of coordinating many aspects of *Arundo* eradication and control—access to up-to-date scientific information and the latest eradication methods, materials supporting landowner permission and regulatory compliance,

and data collection for monitoring and reporting results—is intended to streamline and thus make more feasible the task of Arundo control for the CBDA region.

The coordinated approach to weed management is not a new concept. In 1993, Team Arundo proved that coordination and cooperation among agencies could establish an effective Arundo control program on the Santa Ana River (Frandsen, 1993). The California Department of Food and Agriculture has implemented its Weed Management Area program with this concept as its basis. Research such as that undertaken by California Dept. of Fish and Game with support from TAdN (Trumbo, 1998) and by Karen Gaffney of Circuit Rider Productions (Gaffney, 2002), as well as the written and verbally shared experiences of the many members of TAdN, tell us that it is possible to locally eradicate and regionally control Arundo with the right techniques and diligent monitoring. These sources and more are cataloged on the TAdN website (<http://www.teamarundo.org>) in the Arundo Reference Library, a product of Phase 1.

Program Adaptive Management

We adaptively manage this program to better address site-specific eradication conditions, and to make use of the latest information on control and the ecology of the weed. We also adapt program management to address administrative challenges, such as regulatory issues, partner communication, property owner concerns, and legal or liability issues.

Examples of such changes of approach or focus are:

- The ongoing challenge of gaining permission from landowners for access to private land has been more effectively addressed through the development of educational outreach materials, sample letters, testimony from firefighters, and presentations that may be downloaded from the TAdN website.
- We have revised our hypotheses to reflect current needs. Our former hypothesis to test Arundo's affect on geomorphology was discarded due to the large number of uncontrollable variables involved. We have replaced this hypothesis with a stream capacity study that is testable (see 3. Approach, Level 3).
- The current monitoring protocol is inadequate to scientifically and objectively test program hypotheses. Therefore, we have developed an experimental design for this purpose (see 3. Approach, Level 3).
- Phase I proposed to obtain statewide permits with the assistance of the California Department of Fish and Game. Due to difficulties with this process we have decided to pursue a programmatic permit, following a successful model by our current Putah Creek eradication partner (see 3. Approach, Level 4).
- As funding becomes scarcer and the threat of invasive species increases, it becomes more important to prioritize resources for NIS eradication. Therefore, we are proposing the development of a regional GIS map of Arundo infestations encompassing the CBDA region, overlaid with natural resource and sensitive species habitat information to allow identification of priority eradication sites (see 3. Approach, Level 2).

3. APPROACH

Team Arundo del Norte was formed to coordinate across organizations and jurisdictions on all matters concerning the control of the noxious weed *Arundo donax*. This program's objectives were constructed during discussions with TAdN members, and its approach reflects the group's priorities, which include:

- Developing a body of high-quality information that can be shared and kept updated.
- Tracking and collecting responses to challenges faced by individual groups carrying out eradication.
- Researching and developing better techniques for Arundo control.

This proposal builds on Phase I to develop **a regionally coordinated Arundo eradication program**. The program utilizes the considerable resources already committed to the NIS management problem, drawing on a large group of experts and experienced practitioners from academic institutions, government agencies, non-governmental organizations, and private citizenry. Scientific research results, as well as techniques, innovations, and new approaches to challenging problems and best management practices are shared. This information is collected and disseminated for the benefit of partners and stakeholders.

The program supports local eradication efforts with information, guidance, streamlined-procedures, and funding. Program partners manage local decisions and responsibilities. Program coordinators, with the advice of the TAdN Steering Committee, carry out work that benefits all partners, including:

- An array of control methods recommended for individual eradication projects.
- Standardized monitoring and data management techniques.
- Consolidation of geographic information.
- Use of the Internet to provide easy access to information and foster communication.

CBDA MAY FUND PHASE 2 OF THIS PROGRAM AT ANY OF FIVE LEVELS. THE LEVELS ARE CUMULATIVE, EACH BUILDING ON THOSE BEFORE IT.

APPROACH, LEVEL 1: Eradication and Coordination

Level 1 accomplishes the following:

1. Expand the number of Arundo eradication sites by funding eradication implementation and monitoring by 6 new partners at multiple sites in 7 watersheds.

The 6 new partners are located in Upper Cache Creek, Lower American River, Lindo Channel, San Joaquin River, Ash Slough/Cottonwood Creek, and Gray Lodge Wildlife Area. See Location Map, Attachment B. In all new locations, the partner watershed groups or agencies are completely prepared to eradicate Arundo on their streams. They have provided informed cost estimates for eradication, and require only labor and/or funding to begin immediately. The program will deliver funds and expertise to Level 1 groups to immediately carry out planning and eradication, and follow up with monitoring. Pretreatment surveys and follow-up monitoring will use methods developed under Phase 1 of the program.

2. Extend the monitoring period for currently funded partners from three to five years.

Five years of post-treatment monitoring and possible retreatment are required to completely eradicate Arundo. Level 1 provides currently funded partners an additional two years of funding to complete monitoring for a total of five years.

3. Train new partners.

This program provides partners with intensive training in how to conduct Arundo eradication planning, surveying, implementation, and monitoring. Program staff meet with each partner and train them how to conduct an initial site assessment using the program's data forms and a hand-held GPS receiver. Assistance is provided for permitting, outreach, and education. Restoration information is provided to partners with projects requiring erosion control, bank stabilization, and native plant revegetation. Partners have an opportunity to participate in scientific research.

4. Expand the dossier of potential Arundo eradication partners/stakeholders.

Identify organizations in areas where Arundo eradication is a high priority. Continue to field potential partner and stakeholder information for our potential partner database. A broad range of information is now collected and recorded to help us select partners in priority areas and who are most capable to fulfill program requirements as fiscal and administrative agents.

5. Upgrade the data management system.

The Arundo Surveying and Monitoring Database will be upgraded to better meet the needs of program partners. Changes will include: 1) Create an off-line version of the existing database in MS Access. This will enable participating partners to enter, review, and edit their data more easily than in the web-based database. 2) Simplify protocols and forms to minimize the time and effort required of partners for data collection. With the research component now conducted by professionals, segregated from partner responsibilities, partners will be able to focus on information that is most relevant to their project management. This will reduce the number of data fields required as well as the complexity of the field forms. 3) Add ready-made queries and reports to the database. The ability to query and produce progress reports will automate partner reporting and improve their ability to view their own progress. This added functionality will give project partners an incentive to input data and give them a powerful new tool to manage their projects.

6. Continue the current level of program administrative support.

APPROACH, LEVEL 2: Mapping

In addition to tasks proposed in Level 1, Level 2 proposes:

1. Create a regional Arundo distribution map and eradication priority map

To date there is no California-wide or Bay-Delta map of the distribution of *Arundo donax*, information critical to region-wide planning of its control. At Level 2 the program creates a comprehensive distribution map of Arundo in the CBDA region. This is then combined with natural resource data in a GIS model to produce a map displaying locations where Arundo threatens sensitive habitat and other resources in need of protection. The model, which will be flexible to allow for additions and changes to the input values, will be a valuable tool for regional Arundo control planning and financial decision-making. In the process of creating the Arundo distribution map, the program will develop an inventory of existing datasets and the people creating and maintaining them, and create opportunities for partnerships that will be mutually beneficial in Arundo mapping and data management. All map information will be added to the program's map server currently under development.

These objectives will be accomplished in three steps, as follows:

- Existing data inventory and acquisition
Assemble DOQQs from CaSIL for the Bay-Delta region for use in mapping. Inventory and acquire any more recent local aerial imagery for target areas. Conduct interviews with knowledgeable people in each region or watershed to identify local *Arundo* infestations and any existing maps, map data, or other documentation on *Arundo* distribution. Create a geographic information system (GIS) for storage and analysis of these data and data created in the following steps. Identify areas where *Arundo* is incompletely mapped and documented.
- Mapping
Visit areas determined for improved mapping and map the *Arundo* infestations using GPS and aerial imagery. Use the TAdN *Arundo* Mapping Protocol (based upon the California Weed Mapping Standard). Coordinate with Cal-IPC and CDFCA mapping efforts to insure inclusion in their weed distribution databases. Post the Bay-Delta region *Arundo* distribution map on the TAdN website using the map server developed in Phase 1.
- Develop a model for prioritization of areas for *Arundo* eradication
Utilize existing resource data (such as the Natural Diversity Database) and standards for ranking stream and terrestrial habitat value (refer to State of the Estuary, Legacy Project, and CBDA Science Program) to create a GIS dataset of the Bay-Delta's high-value natural resources. Combine the *Arundo* infestation map with the high-value natural resource map in the GIS to analyze invasion threat. Create a map output displaying "hot spots" or priority sites for *Arundo* eradication. Use a flexible modeling framework to allow for changes in the rankings of resource values and for addition of new or different features. Work with Bay-Delta conservation groups to refine the eradication prioritization model.

2. Participate in invasive species mapping workshops

TAdN, the California Invasive Plant Council (Cal-IPC), and the California Department of Food and Agriculture (CDFCA) have worked together for years on a weed-mapping standard with the goal of improved geographic data sharing and state-wide maps of the state's worst weeds (cite the California Weed Mapping Handbook). At the recent Cal-IPC Symposium 2003, interest was expressed in the development of a common geographic data management system based on the Weed Mapping Handbook, and it was agreed that CDFCA and Cal-IPC would sponsor a workshop to continue this important work. TAdN will participate in the workshop and the ongoing cooperative effort to develop regional distribution maps of invasive plants other than *Arundo donax*, offering its *Arundo* mapping methods as an example and template for mapping other weeds.

APPROACH, LEVEL 3: Experimental Design and Monitoring

In addition work proposed in Levels 1 and 2, Level 3 scientifically tests project hypotheses. This work has been developed by the TAdN *Arundo* Eradication Program steering committee and Dr. David Spencer, Research Scientist with the USDA Agricultural Research Service, Exotic & Invasive Weed Research Unit, at the University of California, Davis. Hypotheses will be tested as follows:

Hypothesis 1. The eradication techniques used effectively eliminate *Arundo* infestations.

The area to be treated will be inspected visually prior to treatment. A portion of the area will be designated as control or untreated plants and a portion will be designated for treatment. In each area (control and treated) a number of 0.25 m x 0.25 m quadrats will be randomly located and the number of *Arundo* stems present in each will be counted. The location of each quadrat will be determined using a Trimble Pro XRS GPS. We will use a SPAD-502 to measure the chlorophyll content on selected leaves within the quadrats. This information will be used to assess leaf viability. The number of quadrats in each area will depend on the size of the treatment and control areas but will generally not be less than 50 or more than 200. This procedure will be repeated several times at selected intervals for five years post-treatment. The effect of the particular treatment will be tested statistically using a repeated-measures analysis of variance design. All statistical procedures will be calculated using SAS (SAS Institute Inc. 1999). Data will be examined to be sure that they meet the assumption of this parametric procedure and transformed if necessary. Number of stems present before and after treatment will be used to estimate the percent killed.

Experience with *Arundo* regrowth following treatment indicates that new stems may appear in some treated areas and not others. Thus strictly relying on follow-up counts at the quadrat locations may miss the presence of *Arundo*. To avoid this, we will collect additional data on *Arundo* presence by standing at each quadrat location and noting the presence/absence of *Arundo* within a circle with diameter of 5 m. These presence/absence data will be analyzed by logistic regression with the treatment as a covariate.

Hypothesis 1A – The timing of the treatment affects the efficacy of a particular treatment.

This hypothesis will be tested using the above experimental approach for similar treatments made at the same location but applied at different times in *Arundo*'s growing season. Specifically, treatments will be applied in May, July, and September.

*Hypothesis 1B – The treatments are equally effective in different *Arundo* habitats.*

This hypothesis will be tested using the above experimental approach in areas that reflect different *Arundo* habitats. For example, we will compare treatment efficacy in an urban and a wildland setting. We will also compare treatment efficacy using *Arundo* plants along a gradient of distance from the streamside.

Hypothesis 2. Native riparian vegetation increases after *Arundo* removal.

Using the permanent quadrats established to test hypothesis 1, we will record the presence of new species, which occur within the quadrats following treatments. Sampling will be at the same time that the number of *Arundo* stems are counted.

A second method will be to run several transects in the treated area that are perpendicular to the stream course. The length of the transects will depend on the distance from the streamside that the treatment area includes, but will not be less than 25 m or greater than 100 m. Transects will be randomly placed, but the beginning and ending points will be recorded using a Trimble Pro XRS GPS. At each 1 meter interval along the transect, the presence and cover (i.e., distance occupied along the transect) of species that intersect the transect will be noted. Plant species identification will be determined by personnel at the UC Davis Herbarium and voucher sheets prepared as appropriate. Determination of whether or not a species is native will follow information provided in the *Jepson Manual* (Hickman, 1993).

The hypothesis will be tested statistically by calculating linear regression of the number of species present or the cover versus sample date. A significant positive regression coefficient will indicate that revegetation is occurring. In addition, it will show the rate at which species are accruing or plant cover is increasing within the treated area.

Hypothesis 3. Many eradication sites will revegetate on their own.

Data collected to test Hypothesis 2 can be used to evaluate this hypothesis as well. However, the following experiment will be performed at some treatment sites to determine if planting selected species enhances the revegetation process. Ten plots (5 m x 5 m) will be established within the treated area. Five plots will be planted with appropriate propagules (cuttings, seeds, etc.) for species deemed to be desirable for that location. At selected intervals we will return to record the species present within the plots and to collect growth measurements and survival of the planted propagules. After 12 to 18 months depending on the time that the plots were established, we will compare species composition in the two sets of plots (plots without added propagules vs. plots with added propagules). The total number of species recorded over time for each plot will be used as the response variable in an analysis of variance (paired-comparison).

Hypothesis 4. Stream channel capacity increases at *Arundo* removal sites.

In conjunction with Mark Cocke with USDA NRCS (Davis, CA), we will test this hypothesis using a HEC-RAS modeling approach. We will measure stream cross sections in selected stream reaches and obtain other data required to exercise the model. Two scenarios will be evaluated using the model output: one scenario will be the current stream condition, and the second will be based on the removal of *Arundo donax*.

APPROACH, LEVEL 4: Programmatic Permitting

Because of the geographic scope and habitat enhancement objectives of the *Arundo* eradication program, a comprehensive approach is needed to comply with CEQA and NEPA and obtain permit authorization from regulatory agencies, including U.S. Army Corps of Engineers (USACE), U.S. Fish and Wildlife Service (USFWS), National Oceanic and Atmospheric Administration (NOAA-Fisheries, formerly NMFS), California Department of Fish and Game (CDFG), and Regional Water Quality Control Board (RWQCB) for *Arundo* removal and associated activities (e.g., native plant revegetation, minor bank stabilization).

In the absence of programmatic permits, partners will be able to implement *Arundo* eradication using existing permits for specified methods on previously identified sites, but they will be restricted to hand control methods and materials, and permitting efforts will be unnecessarily redundant. The objectives of the comprehensive approach are to:

- Comply with and tier from requirements of the CBDA EIR/EIS and Record of Decision.
- Minimize duplication and the repeated need for preparing compliance documentation and permit applications for the same resource enhancement activities.
- Maximize use of funding for on-the-ground implementation.
- Prepare documents and permit applications that can be used in different watersheds and acquire renewable permits, targeted to last 2 to 10 years.

- Develop an environmental compliance and permitting strategy that is applicable to future Arundo and related invasive weed abatement projects to reduce costs and increase efficiencies.

This comprehensive approach is modeled after the highly successful programmatic environmental compliance and permitting approach used in the lower Putah Creek watershed for Arundo and invasive weed abatement and habitat restoration projects. The Lower Putah Creek Coordinating Committee (LPCCC) is a TAdN partner, and funding for the compliance program was provided, in part, through CBDA's first grant to TAdN. The programmatic compliance and permits cover 40 miles of lower Putah Creek. By not having to repeatedly prepare compliance documentation and permits, the program has saved CBDA, TAdN, and LPCCC tens of thousands of dollars, increased the amount of funds that could be directed to treating Arundo, and enabled new landowners to join in Arundo abatement on their properties with no delay. As a result of the efficiency and lack of frustrating regulatory obstacles, several new landowners have expressed interest in restoring their lands in the past year. This has helped tremendously toward achieving ecosystem restoration on a watershed scale, an important consideration when addressing invasive weed problems. EDAW, the environmental planning firm that prepared and acquired the environmental documents and permits for the Putah Creek program, will provide similar services for this proposal.

Anticipated permits and compliance documents needed are listed with the budget justification in Attachment D. Tasks include coordination with the lead agencies, development of the project description, project meetings, literature acquisition and review, database searches, site visits, resource assessments, impact analysis and development of avoidance measures, and other tasks as required. Subtasks are detailed with the budget justification in Attachment D. Anticipated environmental documentation and permits required for this project include the following:

- CEQA Document: Based on TAdN's approach to include impact avoidance and mitigation measures, a Categorical Exemption (Cat Ex) will be sought.
- NEPA Document: If NEPA is required due to federal involvement (funding, administration), a Categorical Exclusion (Cat Ex) will be sought.
- Section 404 of the Clean Water Act (CWA): A Nationwide Permit (NWP 27) will be pursued for activities below the ordinary high water mark of waters of the U.S.
- Federal Endangered Species Act (FESA) and California Endangered Species Act (CESA) Compliance: NOAA-Fisheries and USFWS will be consulted to determine their likelihood to approve the project, the opportunity to use a letter of concurrence, and needs for additional information or protective measures. Due to the known presence of federal and state-listed or proposed species in the project areas, NOAA-Fisheries, USFWS, and CDFG approvals will be required to obtain a Section 404 permit from USACE and Section 1600 agreements.
- Section 401 of the CWA: A Section 401 permit from the RWQCB is required when applying for most Section 404 permits.
- Section 402 of the CWA: A National Pollution Discharge Elimination System (NPDES) Storm Water Pollution Prevention Plan (SWPPP) may be required if the project will disturb over 0.5 acre at any given site.
- Section 106 of NHPA: Section 106 compliance is required to obtain the Section 404 permit.
- Section 1600 (Streambed Alteration Agreement): A single permit for the entire proposed area or separate permits for each project area will be acquired based on coordination with CDFG.
- Other permits: The need to obtain additional permits from state or local governments will be determined. Possible additional permits include a Reclamation Board Encroachment Permit and grading permits from counties.

APPROACH, LEVEL 5: Equipment and Training

In addition to activities proposed in Levels 1-4, Level 5 proposes to identify and train regionally-based eradication equipment operators and support them in obtaining appropriate equipment. The approach will follow a successful model by stakeholders in the upper Sacramento River region. They selected and trained a local operator to perform machine mowing and mulching of Arundo. This operator is invaluable to the Arundo eradication projects in the area because he is known and trusted in the community. We propose adopting this approach by locating operators within three CBDA subregions: the Bay Area, San Joaquin River, and Lower Sacramento River. Funding for equipment purchases will be in lieu of work to be performed by the operator for eradication partners in that region. Equipment will then be the property and sole responsibility of the owner-operator. Equipment operators will be trained in the proper techniques of mowing and mulching Arundo in ways that protect native habitat and wildlife. Long-term economic benefits will be realized by participating partners by eliminating the need for extensive handling and hauling of biomass.

4. FEASIBILITY

The eradication of *Arundo donax* in participating watersheds is feasible because:

- Unlike many other weeds, Arundo can be eradicated because it does not produce viable seed.
- Its movement is limited to human introduction and downstream dissemination.
- The public and government agencies are responding to education outreach and publicity of the Arundo problem by providing political and monetary support.

The proposed coordinated TAdN approach is appropriate because it:

- Reduces costs associated with centralized education outreach material development and dissemination.
- Reduces regulatory barriers by developing programmatic permits.
- Reduces uncertainty by making scientific research information available on the best Arundo eradication and post-eradication revegetation methods.
- Reduces data and project management costs and effort.
- Simplifies data collection and data management.
- Offers a consistent program to evaluate performance and results.
- Standardizes record keeping and provides the means to compare results of multiple projects.
- Provides a model for NIS eradication and project management.
- Provides the oversight and data management to track multiple projects through time.
- Provides the institutional stability and continuity needed to manage projects requiring rigorous follow-up and long-term monitoring.

The time that the program has allotted to accomplish eradication is appropriate. However, CBDA's three-year funding cycle is shorter than the five-year period required to complete eradication. This proposal extends the monitoring period for currently funded partners. New partners will need an additional two years funding following the proposed fund period. We will pursue funding for a full five years of monitoring for all partners.

Access to property where Arundo infestations are located can be a challenge. Most of our current and proposed partners have jurisdiction over or have already begun negotiating access to the lands where targeted eradication sites are located.

Our regulatory foundation is built on DFG 1603 permits, CEQA categorical exemptions, and Fish and Wildlife Service and National Marine Fisheries Service concurrence with the Department of Pesticide Regulation determination of “not likely to adversely effect” sensitive species. New eradication partners will be able to reference and build on the regulatory compliance achieved by current partners. Our current (Phase 1) program is limited to eradication and herbicide treatment defined as “hand-work” methods. We plan to expand eradication method options through proposed programmatic permitting (Level 4).

5. PERFORMANCE MEASURES

Program performance will be monitored in terms of the amount of *Arundo* successfully eradicated, and by the value of the program’s data and information products in affecting future eradication.

Work in Level 4 will scientifically test hypotheses 1-4 (see Approach, Level Four). Research data will be collected and analyzed independent of partners’ monitoring efforts, and compared to test the significance of data collected by partners. It will then be posted to a central database on the TAdN website for storage, analysis, and dissemination. A map server funded under Phase 1 will soon enable users to locate CALFED partners and their data by geographical areas.

To monitor success of the eradication efforts, partners will use the monitoring protocol developed by Team *Arundo del Norte*. This protocol includes an initial site assessment, a treatment log, and follow-up monitoring. The protocol, its forms, and instructions are at <http://teamarundo.org/survey/index.html>. It is designed for ease of use and repeatability, and field-tested by the program’s Data/Information Coordinator with current partners. The table below summarizes data collected by partners to evaluate their success:

Hypothesis	Data Collected	Data Evaluation
1. The techniques used effectively eliminate <i>Arundo</i> infestations.	<ul style="list-style-type: none"> • Measure <i>Arundo</i> kill-rate. • Photo documentation for 5 years (aerial if possible). • Amount of resprouting and retreatment for 5 years after eradication. 	<ul style="list-style-type: none"> • Compare kill-rate and cost of various methods. • Compare rates of <i>Arundo</i> (re)growth on treated and untreated sites.
2. Native riparian vegetation increases after <i>Arundo</i> removal.	<ul style="list-style-type: none"> • Photo-documentation for 5 years (aerial if possible). • Percent cover of native and non-native plant species before eradication and at follow-up monitoring visits. 	<ul style="list-style-type: none"> • Compare relative cover of native and non-native riparian vegetation onsite before and after eradication.
4. Many eradication sites will revegetate on their own.	<ul style="list-style-type: none"> • Photo-documentation for 4 years. • Percent cover of native and non-native plant species before eradication and at follow-up monitoring visits. 	<ul style="list-style-type: none"> • Compare actively and passively revegetated eradication sites on similar reaches or streams.

A questionnaire will be distributed to all partners and posted on the website to secure feedback on the overall effects the program has had on the TAdN *Arundo* eradication effort in the CBDA region.

A simple way to assess its usefulness is to evaluate the trend in website usage. Server statistics will be collected and assessed for this purpose.

6. DATA HANDLING AND STORAGE

Collectively, partners' eradication and monitoring data, research team data, and regional map development will provide TAdN and the CBDA invaluable information on the distribution, spread, control, efficacy, and ecological effects of *Arundo donax*. Phase 2 of the Arundo Eradication Program will expand the ability of the program to collect data of regional strategic importance.

Level 1 funding will use the database and data handling techniques developed under Phase I to support additional partners at the same level of data collection. This system uses paper field forms. Field data is submitted to program administration and entered into a central database using electronic forms on the TAdN website. Text information presented on the website such as control methods and Arundo research papers are housed at CERES with the TAdN website. Data is made available for storage on paper or in digital format by the partners via an automated request function on the website.

Levels 2 and 3 will expand the ability of the program to collect data of regional strategic importance. Data and information developed under Levels 2 and 3 will be stored in GIS and database format at the Sonoma Ecology Center and copies shared with interested stakeholders, such as the Interagency Ecological Program and the Department of Water Resources Flood Control Division. The map server being developed under Phase 1 will provide public access to Arundo distribution data, and stakeholder contact information will be available for networking purposes in accordance with the wishes of the stakeholder.

7. EXPECTED PRODUCTS/OUTCOMES

The products, outcomes, and deliverables of the program are briefly summarized below. A detailed description can be found in Attachment A.

LEVEL 1

- Approximately 313 acres of Arundo eradicated in the CBDA region. Eradication projects implemented by 6 new and 5 current partners at multiple sites in 11 watersheds.
- Six new eradication partners trained to effectively develop eradication plans, implement appropriate control methods, and to conduct monitoring using TAdN protocols.
- Dissemination of educational materials used for outreach.
- An editable and queryable database for project management and data sharing.
- Expanded and updated database of potential new partners and stakeholders.
- Continued development and maintenance of the TAdN listserv, website and database of eradication methods, resources, monitoring data, and authoritative information on all aspects of Arundo control.
- Five years monitoring data for current partners, three years for new partners.
- Increased level of public awareness of Arundo, including education efforts directed at the general public, infestation area property owners, and local agencies.
- Quarterly progress reports to CBDA. Yearly progress reports to TAdN. Final report.

LEVEL 2

- A map displaying the Arundo distribution for the entire CBDA region.
- Model and map of locations at which Arundo threatens sensitive or otherwise high-value resources.
- Recommendations for prioritization of Arundo eradication areas and the partnerships that may be developed to accomplish the eradication.

LEVEL 3

- Report describing experimental design, field methods, statistical analysis plan, results of statistical tests, and discussion of results in relation to program goals.

LEVEL 4

- Programmatic permits obtained for all participating partners. Significant time and cost savings for eradication partners and permitting agencies.

LEVEL 5

- Subregional owner-operators of eradication equipment identified, trained, outfitted and hired.

8. WORK SCHEDULE (See Attachment A.)

B. APPLICABILITY TO CALFED ERP AND SCIENCE PROGRAM GOALS AND IMPLEMENTATION PLAN AND CVPIA PRIORITIES

1. ERP, SCIENCE PROGRAM AND CVPIA PRIORITIES.

This program directly addresses goals set forth by the CBDA NIS Strategic Plan and the ERP. The program addresses Goal 5 of the Ecosystem Restoration Program to “reduce negative biological and economical impacts of established non-native species,” which is a BR-3 Bay Area priority and MR-1 multi-regional priority of this PSP. Relevant objectives include Objective 6 to “halt the introduction of invasive aquatic and terrestrial plants into Central California” and Objective 7 to “focus control efforts on those introduced species for which control is most feasible and of greatest benefit.” The program addresses ERP priorities by improving and increasing aquatic and terrestrial habitats and ecological functions in the CBDA region. The program supports sustainable populations of diverse and valuable plant and animal species by removing a highly invasive plant that displaces these species. Removal of Arundo from stream channels prevents impediments and erosion that disrupt stream flow, cause flooding, and destabilize stream banks. Program objectives correspond with Goals I, II, and III of the NIS Plan to prevent and control the spread of NIS through appropriate management, and reduce their negative ecological and economic impacts. This program addresses the issues (NIS Plan) of leadership, authority and organization; coordination, cooperation, and partnership; and education and outreach by providing the following:

- A base of expertise and a conduit for information exchange.
- A single entity for coordination of Arundo eradication projects.
- Guidance for the best methods of project implementation and monitoring.

- Start-up of several projects in critical stream locations that would otherwise not move forward.
- Feeding new information from on-the-ground eradication, monitoring, and restoration into a shared information pool.

2. RELATIONSHIP TO OTHER ECOSYSTEM RESTORATION PROGRAMS

The Arundo Eradication and Coordination Program is coordinating NIS eradication efforts with the CDFA Weed Management Area (WMA) Program. The WMA Program organizes eradication efforts on a regional basis and we hope to strengthen this effort through our program's goals. Our cooperation and partnership with CDFA and WMA members is necessary to coordinate effective eradication planning and implementation. The TAdN Arundo Eradication Program is emerging as a model for Weed Management Areas. The program takes a coordinated regional approach, using proven treatment methods and outreach techniques, and a standardized survey and monitoring protocol. Collaborating with the WMA program provides TAdN a broader NIS and multi-region context.

The TAdN Arundo Eradication and Coordination Program remains closely linked to the California Invasive Plant Council (Cal-IPC), the California Native Plant Society, and the agencies and academic institutions represented by the diverse members of the TAdN Steering Committee. (See Qualifications, Section C.) The UC Davis Information Center for the Environment (ICE) and the California Resources Agency's CERES Program will continue to provide technology and database services for our program.

3. REQUESTS FOR NEXT-PHASE FUNDING (See Section 4 below.)

4. PREVIOUS RECIPIENTS OF CALFED PROGRAM FUNDING

The first phase was titled the Arundo Eradication and Coordination Program, FWS Agreement #113320J033. This program is in Year 3 of a three-year \$818,045 funding cycle. The program has been in operation since May 2001. As of November 2003 the program has spent \$505,675. The hypotheses, conceptual model, and adaptive management framework are the same as for Phase II. Progress and accomplishments for each of the current five partners as of December 2003 are summarized below. Maps showing partner progress are included in Attachment C.

Napa River

Access granted to implement surveys and eradication on 46 properties. 183 infestations at 7.09 acres mapped. 8 sites with multiple infestations are in the process of eradication with treatments and follow-up monitoring occurring. Follow-up treatment and monitoring on 46 properties.

Sonoma Creek

Access granted to implement surveys and eradication on 27 properties. Obtaining access to 9 infested properties is currently in progress, which will provide access to 75 patches of Arundo. The mainstem of Sonoma Creek has been mapped, which includes 25 miles of stream. A total of 141 infestations have been mapped on the mainstem and four tributaries. The majority of tributaries have yet to be surveyed. 27 sites with 44 infestations, totaling over 2 acres are in the eradication process with treatment and monitoring being done. Follow-up treatment and monitoring on 27 properties.

San Francisquito Creek

Access granted to implement surveys and eradication on 27 properties. The mainstem has been surveyed and mapped. There are 27 infestations for a total area of a little less than 1 acre. 25 infestations have been treated; 5 infestations have been eradicated (no regrowth for two years). Access is being worked on for the 2 remaining infestations. Follow-up treatment and monitoring on 20 properties.

Putah Creek

Access granted to implement surveys and eradication on 6 properties. Access obtained for 50% of the infestations, with the potential for 20 more landowner agreements depending on additional funding to do the eradication work. There has been the addition of around 100 acres of riparian area to the project to start Arundo treatment and monitoring. One access agreement recently obtained allowed access to 30 acres of riparian area. Mapped 405 infestations of Arundo, approximately 21 acres. There are 5 sites with multiple landowners and numerous infestations where eradication work is being done. Follow-up treatment and monitoring on 6 properties.

Walnut Creek

Access granted to implement surveys and eradication on 8 properties. Most eradication and surveying work is being done on Contra Costa County property. 26 patches have been mapped, totaling approximately 1455 square feet. Treatment has been done on 900 square feet of Arundo. Next season the remaining will be treated with the county doing herbicide applications and volunteers cutting. Follow-up treatment and monitoring on 8 properties. Fiscal and administrative agent identified and in negotiation.

Phase One project coordination and data coordination deliverables completed:

- Developed survey methods, mapping, and monitoring protocols and guidelines.
- Created field data collection forms based on the above protocols.
- Made all protocols, guidelines, forms, and educational materials available to the public on the TAdN website.
- Upgraded the TAdN information archive.
- Set up a program email listserv for communicating with the partners.
- Held quarterly Steering Committee meetings to guide the program.
- Staff met with each partner to help conduct initial surveys and GPS/mapping training.
- Disseminated Arundo educational materials to interested stakeholders throughout the state.
- Set up a database on 32 potential partners.

Adaptive Management actions taken:

- Developed guidelines for writing a revegetation/restoration plan.
- Established program requirements for all participating partners.
- Satisfied required regulatory compliance for hand control of Arundo.
- Secured a Department of Pesticide Regulation request for a “not likely to adversely affect” letter of concurrence from the U.S. Fish and Wildlife Service and the National Marine Fisheries Service, for the use of the herbicide glyphosate for control of *Arundo donax*. This letter of concurrence satisfies NEPA requirements for an informal consultation.

5. SYSTEMWIDE ECOSYSTEM BENEFITS

This program has several biological and ecological benefits:

- Preserve existing native riparian habitat and prevent further spread of *Arundo* infestations.
- Restore native vegetation and processes displaced and disrupted by *Arundo*.
- Protect and restore habitat for native fish and other species that depend upon native vegetation.
- Conserve water resources by reducing the *Arundo* biomass in these waterways.
- Protect and restore natural stream geomorphic processes by preventing channel bed aggradation, severe bank cutting, and silt deposition caused by *Arundo* biomass buildup.
- Protect vegetation, bank stability, and streamside property by reducing the threat of flooding and fire brought by advanced *Arundo* infestations.

6. LAND ACQUISITION PROPOSALS (not applicable)

C. QUALIFICATIONS

Program Administration

The Program Administrator, the Sonoma Ecology Center (SEC), has had nine years experience in coordination of local *Arundo* eradication efforts. Its earliest project led to the formation of Team *Arundo* del Norte, when SEC held a workshop to educate Northern California environmental management organizations on the ecological hazards of *Arundo donax* invasion. Richard Dale, Executive Director, is a veteran of local and regional environmental project management. Under his 14 years of leadership, the SEC has become a pivotal community organization with efforts in local planning, organic agriculture, environmental education, native habitat restoration, and watershed assessment.

Program Coordinator: Mark Newhouser, Restoration Program manager, Sonoma Ecology Center; 20 years experience with community project planning and coordination, environmental education and outreach, and volunteer coordination. For the past seven years he has coordinated *Arundo* eradication efforts in the Sonoma Valley Watershed, and since April 2001 has coordinated TAdN's *Arundo* Eradication and Coordination Program. Board member, California Invasive Plant Council.

Information Technology and Data Management Advisor: Deanne DiPietro, Research Associate, Sonoma State University. Member, Cal-IPC Board of Directors. Program liaison to CERES, ICE, and CSTARS. Extensive background in environmental data management with CERES and ICE. Remote sensing specialist, geographer, botanist. Experience in landowner and volunteer coordination for *Arundo* eradication in Sonoma Creek; TAdN founding member, webmaster, and listserv manager.

Information/Data Co-Coordinator: Bob Hass, Principal, Hass & Associates, a communications and consulting firm that specializes in environmental issues and products, and public education research. Conservation Chair, Milo Baker Chapter, California Native Plant Society. For the past three years he has assisted with information coordination for the program.

Science Team Lead and Research Coordinator: David Spencer, Ph.D., USDA-Agricultural Research Service, Exotic & Invasive Weed Research Unit, Weed Science Unit, University of California, Davis. Research in applied ecology of *Arundo donax* in Northern California.

Programmatic Permitting Lead: Ron Unger, EDAW. Putah Creek Council.

Team Arundo del Norte Advisory Committee

Lois Battuello, Napa River Landowner, Representative, Napa River property owners.

Gary P. Bell, Ph.D., The Nature Conservancy of New Mexico.

Mary Bettiga, MA. Agricultural Biologist, Napa County Agricultural Commissioners Office.

Raymond I. Carruthers, Ph.D., Research Leader, USDA-Agricultural Research Service, Western Regional Research Center, Exotic and Invasive Weed Research Unit.

Kristin Cooper-Carter, M.A., Program, Administration, Computer Science and Technology, College of Engineering, California State University, Chico.

Josh Collins, San Francisco Estuary Institute.

Mike Dannenberg, Deputy Agricultural Commissioner, Napa County Agricultural Commissioners Office.

Tom Dudley, Ph.D. University of Nevada, Reno. Board member, Cal-IPC.

Karen Gaffney, Restoration Ecologist, Circuit Rider Productions, Inc.

Jason Giessow, Santa Margarita and San Luis Rey Watersheds Weed Management Area and DENDRA Inc. Member, Cal-IPC Board of Directors.

Jessie Giessow, Santa Margarita and San Luis Rey Watersheds Weed Management Area and DENDRA Inc.

Richard G Holman, Computer Science and Technology, College of Engineering, California State University, Chico.

Marc R. Horney, Ph.D., Natural Resources Management and Range Livestock Production Advisor, University of California Cooperative Extension. Colusa, Glenn, and Tehama Counties.

Nelroy Jackson, Ph.D., Independent Consultant.

Michael Krebsbach, Monsanto Corporation.

Jan Lowrey, Cache Creek Conservancy Projects Manager, Cache Creek farmer/landowner.

Rich Marovich, Streamkeeper, Putah Creek Coordinating Committee.

Robyn Lee Myers, Ph.D., State Landscape Ecologist, Watershed Planning Services, USDA NRCS, UC Davis.

Michael Perrone, California Department of Water Resources, Division of Environmental Services.

Steve Schoenig, Invasive Species Coordinator, California Department of Food & Agriculture.

Harry Spanglet, Environmental Specialist, Environmental Services Office, California Department of Water Resources.

Joel Trumbo, California Dept. of Fish and Game, Pesticide Investigations Unit.

D. COST

1. Budget (see Form 6)

2. Cost-Sharing

The following cost-share commitments have been made for Phase 2 of the program:

Partners		Other Sources	
Cache Creek	76,990	CERES	10,000
San Joaquin River	75,000	ICE	10,000
	35,000*	USDA ARS	58,800
Gray Lodge State Wildlife Area	29,220	SSU	10,000*
Lindo Channel	66,200	Subtotal	\$88,800
Cottonwood Creek/Ash Slough	21,730		
	42,176*		
Lower American River	<u>140,575</u>		
Subtotal	\$486,891	TOTAL	\$575,691

*probable

E. LOCAL INVOLVEMENT

TAdN began as a local volunteer initiative, and is still dedicated to locally-led eradication efforts. Local partners control decisions regarding all aspects of *Arundo* eradication. Each eradication partner is also partnering with local organizations in their respective watersheds. RCDs, Adopt-a-Watershed programs, local conservancies, WMAs, and a multitude of agencies comprise coalitions being established to address the *Arundo* invasion. As the TAdN *Arundo* Eradication Program grows, more stakeholder groups and property owners will participate in eradication efforts. As awareness of the problem grows, these new stakeholders will provide access, volunteer labor, and the physical presence necessary to successfully monitor and eradicate *Arundo*. Most active weed management groups, native plant advocates, and restoration groups are aware of TAdN or already participating.

F. COMPLIANCE WITH STANDARD TERMS AND CONDITIONS

The applicant agrees to comply with all standard State and Federal contract terms.

G. LITERATURE CITED AND SUPPORTING RESEARCH

Agricultural Research, April 2001. Article and photos describing researchers' (UC Berkeley ecologist Thomas L. Dudley, ARS entomologists Raymond I. Carruthers and Alan A. Kirk, and ARS plant pathologist Timothy L. Widmer) search in Nepal for biological control agents for *Arundo donax*, tamarisk, and salt cedar.

<http://www.ars.usda.gov/is/AR/archive/apr01/path0401.htm>

Bell, Gary P. 1997. Ecology and management of *Arundo donax*, and approaches to riparian habitat restoration in Southern California.

Cal-IPC Pest Plants of Greatest Ecological Concern, <http://www.cal-ipc.org/>

- CalFlora. Comprehensive database of plant distribution information for California on critical issues related to plant diversity and change in distribution of native and exotic species.
<http://www.calflora.org/calflora/>
- California Environmental Resources Information System (CERES) site on invasive species.
<http://www.ceres.ca.gov/theme/invasives.html>
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Attachment A. Summary of Proposed Work to be Performed by Task with Schedules and Deliverables.

The proposed work is divided into 5 levels, and may be funded at any level. The levels are cumulative, each building on those below it. Schedules will be modified, depending on actual contract start and seasonal limitations.

Task	Start Date	Schedule	End Date	Deliverable
LEVEL 1				
ERADICATION				
General progress on eradication.	Contract signing	ongoing	end of contract	Final report including acreage eradicated, status of partner database, information and monitoring database and online products, and status of all other deliverables.
Monitoring implementation for current partners: Napa River, San Francisquito Creek, Sonoma Creek, Putah Creek, Walnut Creek	summer/fall, yr. 1, 2	yearly	end of year 2	Monitoring data posted on website, included in final report
Eradication and monitoring work for new partners: Upper Cache Creek, Lower American River, Lindo Channel, San Joaquin River, Ash Slough/Cottonwood Creek, Gray Lodge Wildlife Area				
Eradication Plan	contract signing	NA	6 mo. after contract signing	Document to funder
Eradication	summer/fall, yr. 1, 2	yearly	summer/fall, yr. 2, 3	Included in quarterly reports
Monitoring Implementation	summer/fall, yr. 1, 2	yearly	3 yr. after eradication	Monitoring data posted on website, included in final report
COORDINATION AND ADMINISTRATION				
Quarterly reports (fiscal and progress)	contract signing	quarterly	3 yr. after contract signing	Quarterly reports (fiscal and progress)
TAdN AEP Steering Committee mtgs.	end of 1 st quarter fol. contract signing	quarterly	3 yr. after contract signing	Agendas & meeting minutes, listserv notification
Add potential partners	contract signing	quarterly	3 yr. after contract signing	10-20 potential partners/stakeholders added to database

Task	Start Date	Schedule	End Date	Deliverable
Assist new partners	contract signing	as needed	3 yr. after contract signing	List of current partners, on-site meetings, phone/email support to help with surveying, mapping, eradication, reveg, monitoring.
Final report contract signing	2.5 yr. after	NA	3 yr. after contract website	Document to funder, posted to
<u>DATA/INFORMATION COORDINATION</u>				
Training & support for eradication partners in use of Arundo database	contract signing	ongoing	end of Year 1	Revised "How to Use" manual
Instructional materials for using Arundo database	contract signing modifications	ongoing	end of project	Web pages & hardcopy materials
Gather new, authoritative information on the latest research, education, and outreach materials.	contract signing	ongoing	end of project	Website and listserv
Enter descriptions of new partner projects into Natural Resource Projects Inventory (NRPI). Update current project descriptions.	contract signing	ongoing	end of project	Data in NRPI with links from website
Online access to monitoring data & project info., including graphic user interface (map server).	contract signing	ongoing	updated until end of project	Web/database application for posting monitoring data and the data itself. Ready-made queries and reports. Offline version.
<u>LEVEL 2</u>				
Gather surveying and monitoring data on Arundo eradication within CBDA region and enter into a searchable database.	contract signing	ongoing	end of project	A searchable database of information from partner projects on the TAdN website using the program's map server.
Consolidate existing data into a comprehensive regional record of Arundo distribution in the CBDA region.	contract signing	ongoing	end of project	A Bay-Delta regional distribution map of <i>Arundo donax</i> .

Task	Start Date	Schedule	End Date	Deliverable
Develop a model for prioritizing areas for Arundo eradication using existing Arundo infestation data and standards for ranking habitat value.	contract signing	ongoing	end of project	GIS dataset of Bay-Delta's high-value natural resource areas superimposed on regional Arundo distribution map. Recommended eradication actions including partnerships.
Participate in invasive species mapping workshops with CallIPC and CDFA, using TAdN protocols as model for mapping other weeds.	contract signing	as needed	end of project	Development of multiple-weed mapping protocol.
<u>LEVEL 3</u>				
Scientifically test 4 hypotheses.	contract signing	ongoing	end of project	Report describing methods, results of statistical tests, and discussion of results in relation to program goals.
<u>LEVEL 4</u>				
Obtain programmatic environmental work, progress compliance for all partner projects.	contract signing	ongoing	end of project	Permit covering current and proposed partners' report on obtaining programmatic permit for any Arundo eradication project following TAdN protocols.
<u>LEVEL 5</u>				
Provide equipment operators with training and equipment for mowing and mulching Arundo on-site.	contract signing	ongoing	end of project	Trained and retooled equipment operators in three CBDA subregions: the Bay Area, San Joaquin River, and Lower Sacramento River

**[CLICK HERE](#) TO VIEW
ATTACHMENT B
IN JPG FORMAT**

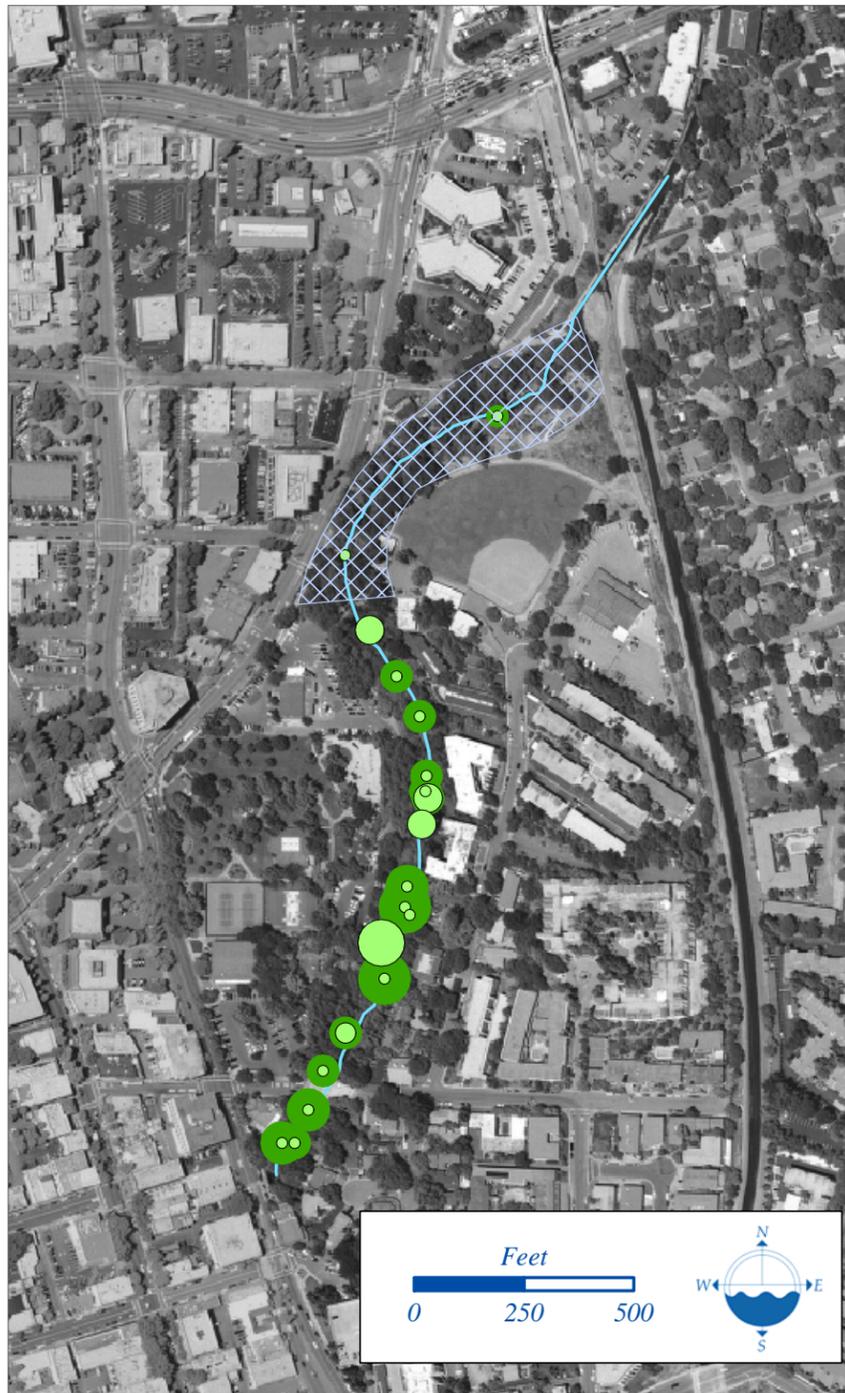
**[CLICK HERE](#) TO VIEW
ATTACHMENT C-1
IN JPG FORMAT**

**[CLICK HERE](#) TO VIEW
ATTACHMENT C-2
IN JPG FORMAT**

**[CLICK HERE](#) TO VIEW
ATTACHMENT C-3
IN JPG FORMAT**



Where is the Arundo?



- Arundo right bank
 - Arundo left bank
 - Arundo removal project
 - Creek or Drainage
- Dots are sized proportionally to the size (length along creek corridor) of the stand of Arundo. Length along the creek corridor was measured from the downstream end of the stand. Size of stands ranges from 2 to 150 feet.



Arundo Donax

Friends of Five Creeks

Arundo Donax (Giant Reed) is a non-native invasive plant that is becoming increasingly common in riparian areas in Contra Costa County. The large reed-like plant reproduces quickly and prevents native plants, important to local ecosystem functions, from flourishing.

Friends of the Creeks has an aggressive Arundo removal program in downtown Walnut Creek (in the blue-hatched area of the map). They are in the process of expanding their efforts to other parts of the watershed that have an Arundo presence.

In 2001, Friends of the Creeks participated in the 2001 pilot project of the GPS data collection survey. Volunteers collected data along a stretch of Walnut Creek that included the area where they had removed Arundo.



Friends of the Creeks gather for a photo after a day of collecting GPS data in Walnut Creek, 2001.

Organizations Active in the Watershed

Walnut Creek Watershed

Friends of the Creeks

Pam Romo
1929 Glenhaven Ave
Walnut Creek, CA 94595
Phone: (925) 939-8979
Email: pmromo@sbcglobal.net

Grayson Creek Watershed

Friends of Grayson Creek Watershed

100 Gregory Lane
Pleasant Hill, CA 94523
Phone: (925) 371-5265

Las Trampas Watershed

City of Lafayette Creeks Committee

Jeff Gilman
City of Lafayette
Public Works Department
3001 Camino Diablo
Lafayette, CA 94549
Phone: (925) 256-1864
Email: Jeff.Gilman@mfgenv.com
Website: www.ci.lafayette.ca.us

Lafayette Area Watershed

Friends of Lafayette Creeks

P.O. Box 311
Lafayette, CA 94549
Phone: (925) 284-4251
Email: cppier1@earthlink.net



Volunteers collect trash and debris during Friends of the Creeks Annual Creek Clean-up event, 2003.

Selected Resources

City of Lafayette, Homeowners Creek Guide to Maintenance, Repair and Planting, revised January 2003.

City of Walnut Creek, A Creek Care Guide for Walnut Creek Residents, (Brochure available online at <http://www.ci.walnut-creek.ca.us/CleanWater/>), 2001.

City of Walnut Creek, Creek Restoration & Trails Master Plan, 1992.

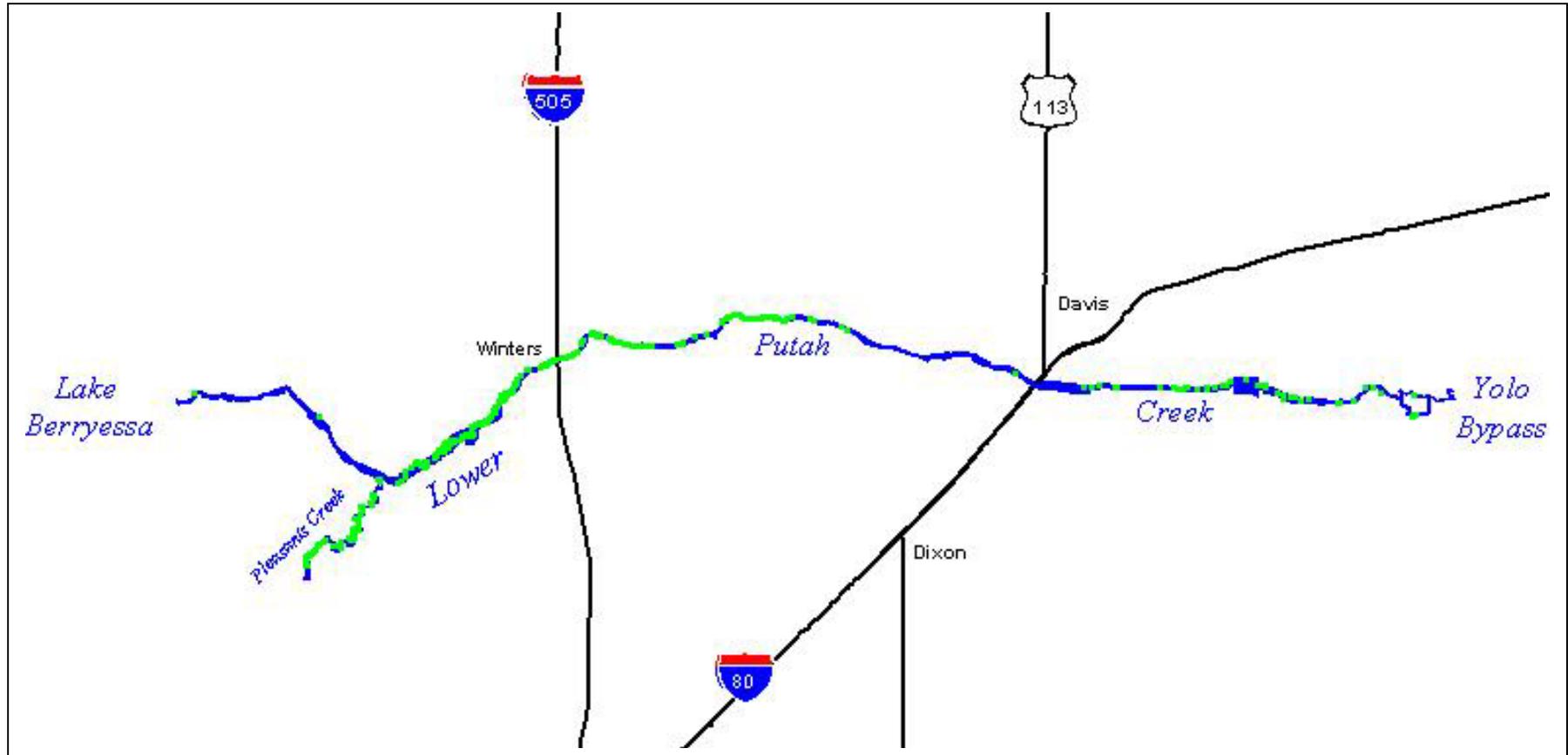
City of Walnut Creek, Creek Walk Map, (Map available online at <http://www.ci.walnut-creek.ca.us/creeks.html>), 2001.

U.S. Army Corps of Engineers, Draft EIR Grayson Murderer's Creek Wansho Area and Drainage Improvement Plan D.A 46, April 1984.

U.S. Army Corps of Engineers, Grayson and Murderer's Creek Feasibility Phase Project Management Plan, March 2003.

U.S. Army Corps of Engineers, Grayson and Murderer's Creek Final Section 905(b) Analysis (Reconnaissance Smog), September 2002.

Arundo Distribution in the Lower Putah Creek Watershed



Attachment D. Budget and Budget Justification.

Subcontractor: American River, Level 1, Task 9, Years 1 to 3.

Sacramento Region: American River and Feeder Streams

Budget

Year 1	Direct Labor (All Volunteer Hours)	Staff Hours	Salary	Benefits (Included in Salary costs)	Contractors	Travel	Supplies Expendibles	Equip- ment	Other Direct Costs
Level One Tasks									
Mapping	300	76	\$2,450			\$438	\$300		
Eradication	2,500	296	\$8,620		\$1,000	\$584	\$795		
Monitoring	200	60	\$1,800						
Volunteer Recruitment/Support		80	\$2,470						\$240
Reporting (Database/photographic records)		66	\$1,965						\$120
Task Total	3,000	578	\$17,305		\$1,000	\$1,022	\$1,095	\$0	\$360
Coordination/Administration		78	\$2,655			\$292			\$120
Level One Total		656	19,960		\$1,000	\$1,314	\$1,095	\$0	\$480
Level Two Tasks									
None									
Year 2	Direct Labor (All Volunteer Hours)	Staff Hours	Salary	Benefits (Included in Salary costs)	Contractors	Travel	Supplies Expendibles	Equip- ment	Other Direct Costs
Level One Tasks									
Mapping		26	\$835			\$146			
Eradication	2800	252	\$7,320		\$2,000	\$876	\$200		
Monitoring	200	98	\$3,010			\$146			
Volunteer Recruitment/Support		90	\$2,745						\$100
Reporting (GIS Database/photographic records)		66	\$1,965						\$120
Task Total	3000	532	\$15,875		\$2,000	\$1,168	\$200	\$0	\$220
Coordination/Administration		78	\$2,655			\$292			\$120
Level One Total		610	\$18,530		\$2,000	\$1,460	\$200	\$0	\$340

Level Two Tasks

None

Year 3	Direct Labor (All Volunteer Hours)	Staff Hours	Salary	Benefits (Included in Salary costs)	Contractors	Travel	Supplies Expendibles	Equip- ment	Other Direct Costs
Level One Tasks									
Mapping		26	\$835						
Eradication		114	\$3,450						
Monitoring	600	232	\$6,740		\$1,000	\$219	\$200		
Volunteer Recruitment/Support		90	\$2,745						\$100
Reporting (GIS Database/photographic records)		66	\$1,965						\$120
Task Total	600	528	\$15,735		\$1,000	\$219	\$200	\$0	\$220
Coordination/Administration		78	\$2,655			\$290			\$120
Level One Total		606	\$18,390		\$1,000	\$509	\$200	\$0	\$340

Level Two Tasks

None

Summary - 3 Years	Direct Labor (All Volunteer Hours)	Staff Hours	Salary	Benefits (Included in Salary costs)	Contractors	Travel	Supplies Expendibles	Equip- ment	Other Direct Costs
Level One Tasks									
Mapping	300	128	\$4,120			\$584	\$300	\$0	\$0
Eradication	5,300	662	\$19,390		\$3,000	\$1,460	\$995	\$0	\$0
Monitoring	1,000	390	\$11,550		\$1,000	\$365	\$200	\$0	\$0
Volunteer Recruitment/Support	0	260	\$7,960			\$0	\$0	\$0	\$440
Reporting (GIS Database/photographic records)	0	198	\$5,895			\$0	\$0	\$0	\$360
Task Total	6,600	1,638	\$48,915		\$4,000	\$2,409	\$1,495	\$0	\$800
Coordination/Administration		234	\$7,965			\$874	\$0	\$0	\$360
Level One Total	6,600	1,872	\$56,880		\$4,000	\$3,283	\$1,495	\$0	\$1,160

Indirect Costs @ 10%

This indirect cost rate includes standard overhead costs for general office requirements such as rent, utilities, telephones, furniture and general office staff.

Sacramento Region/TAdN Partnership: CalFed Grant Funding -- Proposed Budget

Sacramento Region: Projected Cost Share Resources

Sacramento Region: Total Projected CalFed and Local Cost Share Resources

Attachment D. Budget and Budget Justification.

Subcontractor: American River, Level 1, Task 9, Years 1 to 3.

Cost Share

Volunteer hours @\$16.54*	Hours	Value
Year 1	3,000	\$49,620
Year 2	3,000	\$49,620
Year 3	600	\$9,924
	6,600	\$109,164

* The value of volunteer time is provided by the Independent Sector Non-Profit Almanac for the year 2002.

Lower American River Invasive Plant Management Project	Total Cost	10% Share
Project Management	\$55,000	\$5,500
Restoration	\$66,050	\$6,605
Volunteer Stewardship	\$119,777	\$11,978
Performance Monitoring	\$16,280	\$1,628
	\$257,107	\$25,711

Misc Organizational Support	
California Native Plant Society- Sacramento Valley Chapter -	
3 Annual contributions @ \$400 (Hand tools, gloves, etc.)	\$1,200
Sacramento County WMA	
GIS Data Base management & mapping - Administrative support Value estimated at 4 hours per month x 36 months @ \$25 per hour	\$3,600
Local Businesses, Neighborhood Associations, Church groups, Schools	
Volunteer support-donated refreshments, water, printing of work group flyers, etc.	\$900
	\$5,700

Sacramento Region-Projected Cost Share Resources	\$140,575
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Attachment D: Budget and Budget Justification
Subcontractor: American River, Level One, Task 9, Years 1 to 3
Cost Share

Position	Hourly Rate	Projected Hours	Projected Cost
American River Parkway Foundation-Executive Director	\$40	108	\$4,320
Sacramento Weed Warriors-Project Director	\$35	648	\$22,680
Sacramento Weed Warriors-Assistant Director and Volunteer Team Leader	\$27.50	792	\$21,780
Administrative Assistant	\$25	324	<u>\$8,100</u>
Total Projected Cost-Salaries			\$56,880

Attachment D: Budget and Budget Justification.
Subcontractor: American River, Level One, Task 9, Years 1 to 3
Budget Justification

All applicants must complete this form for their proposals. Failure to answer these questions will result in the application not being considered for funding.

Team Arundo del Norte – Arundo Eradication Partnership Proposal
Sacramento Region – American River and Feeder Streams

Budget Form Instructions

Direct Labor Hours. Provide estimated hours proposed for each individual.

American River Parkway Foundation-Executive Director	108
Project Director	648
Assistant Project Director-Volunteer Team Leader	792
Administrative Assistant	324

Salary. Provide estimated rate of compensation proposed for each individual.

American River Parkway Foundation-Executive Director	\$40.00
Project Director	\$35.00
Assistant Project Director-Volunteer Team Leader	\$27.50
Administrative Assistant	\$25.00

Benefits. Provide the overall benefit rate applicable to each category of employee proposed in the project.

Included in salary level – “Loaded rate”

Travel. Provide purpose and estimate costs for all non-local travel.

Due to the size of the region involved and the nature of field work, reimbursement for local staff travel mileage is essential. (Volunteers are not reimbursed, nor are volunteer travel costs calculated independently of the general value for volunteer hours.) All travel will be in private cars. The standard rate used by the American River Parkway Foundation to reimburse staff for business travel is \$0.365 per mile. Some out-of-area travel will be required, such as to TAdN quarterly meetings. Mileage estimates and costs have been provided for each task for each year in the proposed budget. Total costs for travel includes:

Task	Projected Miles	Cost
Mapping	1600	\$584
Eradication	4000	\$1,460
Monitoring	1000	\$365
Coordination	2395	\$874
Total projected miles and travel cost: (Approximately 3000 miles per year)	8995	\$3,283

Supplies & Expendables. Indicate separately the amounts proposed for office, laboratory, computing, and field supplies.

Field Supplies

GPS unit		\$300.00
Loppers	15 @ \$35	\$525.00
Gloves	20 @ \$15	\$70.00
Herbicides		\$600.00
Digital camera		\$440.00
Total		\$1,935.00

Services or Consultants. Identify the specific tasks for which these services would be used. Estimate amount of time required and the hourly or daily rate.

Certified herbicide applicator		
\$80 – Rate subject to negotiation		\$4000.00

Equipment. Identify non-expendable personal property having a useful life of more than one (1) year and an acquisition cost of more than \$5,000 per unit. If fabrication of equipment is proposed, list parts and materials required for each, and show costs separately from the other items.

None

Project Management. Describe the specific costs associated with insuring accomplishment of a specific project, such as inspection of work in progress, validation of costs, report preparation, giving presentations, response to project specific questions and necessary costs directly associated with specific project oversight.

Project management for a community-based volunteer program includes standard management duties such as communications, fiscal record supervision, preparation and processing of personnel and contract documents, and eradication/monitoring program reporting. It also includes field responsibilities, such as inspections, volunteer crew leader training, mapping documentation, preparation of daily work reports, and completing on-site inspections. Finally, and unique to a community-based initiative, project management includes planning and implementing an extensive community outreach effort, developing partnership agreements with collaborating organizations, seeking long term local business support, and maintaining media contacts to publicize the environmental stewardship work volunteers are accomplishing. The time allocations cover only a bare minimum of the time that will actually be devoted to these types of comprehensive community stewardship development and volunteer outreach functions. It should be noted, that because of the long term nature of these types of activities, no mileage reimbursement is included in the budget for volunteer outreach

Project Coordination/Administration and Project Reporting are divided in the Proposed Budget as separate tasks.

The following hours and salary costs are projected for Project Management and Administration:

Position	Projected Hrs/Year	Total Hours	Projected Cost
American River Parkway Foundation- Executive Director	36	108	\$4,320
Project Director	42	126	\$5,040
Total	78	234	\$9,360

The following hours and salary costs are projected for Project Reporting, including establishing the GIS data base and mapping based on TAdN protocols, maintaining the volunteer data base, completing Daily Logs for volunteer work groups, and preparing quarterly and final TAdN reports:

Position	Projected Hrs/Year	Total Hours	Projected Cost
Project Director	18	54	\$1,890
Assistant Director	12	36	\$990
Administrative Assistant	36	108	\$2,700
Total	66	198	\$5,580

Other Direct Costs. Provide any other direct costs not already covered.

Printing-flyers/brochures; office supplies, postage	\$720
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Indirect Costs. Explain what is encompassed in the overhead rate (indirect costs).

Overhead – standard general office requirements – 10%	\$6,682
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Attachment D. Budget and Budget Justification.
Subcontractor: San Joaquin River, Level One, Task 13, Years 1 to 3
Shared Costs

YEAR ONE											
	Direct Labor Hours	Salary	Benefits	Travel	supplies and Expendibles	Services or consultants	Equipment	Other Direct Costs	Total Direct Costs	Indirect Costs	Total Cost
Tasks											
Funding to obtain sub- contractors											
CBDA						20000					20,000
subtotal											
Task Total										0	0
Coordination and Administration											
Reclamation						2500				0	0
LEVEL ONE TOTAL		0	0	0	0	0	0			0	0
LEVEL TWO											
<i>Level One costs plus</i>											
CBDA						35000					35,000
Coordination and Administration										0	0
Reclamation						5000					5,000
LEVEL TWO TOTAL		0	0	0	0	0	5000	0	0	0	0
LEVEL THREE											
<i>Level Two costs plus</i>											
CBDA						35000					35,000
Coordination and Administration										0	0
Reclamation						10000					5,000
LEVEL THREE TOTAL		0	0	0	0	0	50000	0	0	0	0

San Joaquin River

TOTAL BUDGET COSTS

	CBDA	Reclamation	Partner In- Kind Funding Needed	TOTAL COSTS
Direct Labor				
Salary and Benefits			\$25,000	\$25,000
Service Contracts	\$75,000			\$75,000
Material and Acquisitior	\$10,000		\$5,000	\$15,000
Miscellaneous Costs	\$5,000			\$5,000
Overhead and Indirect Costs		\$17,500	\$5,000	\$22,500
Subtotal	\$90,000	\$17,500	\$35,000	\$142,500
SHARED COSTS				
Donated Volunteer Services			\$45,000	\$45,000
Donated Equipment			\$20,000	\$20,000
Donated Supplies			\$10,000	\$10,000
Funding		\$90,000		\$90,000
Total Project Costs		\$90,000	\$75,000	\$165,000

Attachment D: Budget and Budget Justification.
Subcontractor: San Joaquin River, Level One, Task 13,
Years 1 to 3
Budget Justification

All applicants must complete this form for their proposals. Failure to answer these questions will result in the application not being considered for funding.

Budget Form Instructions

Direct Labor Hours. Provide estimated hours proposed for each individual.

\$2,500 is for a lead coordinator to facilitate the development of the Coordination Group and obtain in-kind services and support from all willing partners.

Salary. Provide estimated rate of compensation proposed for each individual.

Funds for salaries will be provided in-kind.

Benefits. Provide the overall benefit rate applicable to each category of employee proposed in the project.

Travel. Provide purpose and estimate costs for all non-local travel.

Travel outside of the non-local area is not anticipated.

Supplies & Expendables. Indicate separately the amounts proposed for office, laboratory, computing, and field supplies.

All supplies and expendables are anticipated to be provided by the partners.

Services or Consultants. Identify the specific tasks for which these services would be used. Estimate amount of time required and the hourly or daily rate.

CBDA funding in year 1 through 3 will be used to obtain the subcontractor services and the associated contract administration.

Equipment. Identify non-expendable personal property having a useful life of more than one (1) year and an acquisition cost of more than \$5,000 per unit. If fabrication of equipment is proposed, list parts and materials required for each, and show costs separately from the other items.

All equipment required will be sought from the partners.

Project Management. Describe the specific costs associated with insuring accomplishment of a specific project, such as inspection of work in progress, validation

of costs, report preparation, giving presentations, response to project specific questions and necessary costs directly associated with specific project oversight.

Its anticipated in-kind services in the amount of \$2,500 will be applied to project management in year one; \$5,000 in year 2, and \$10,000 in year 3.

Other Direct Costs. Provide any other direct costs not already covered.

Indirect Costs. Explain what is encompassed in the overhead rate (indirect costs). Overhead should include costs associated with general office requirements such as rent, phones, furniture, general office staff, etc., generally distributed by a predetermined percentage (or surcharge) of specific costs. *[CORRECTION: If overhead costs are different for State and Federal funds, note the different overhead rates and corresponding total requested funds on Form I - Project Information, Question 17a. On Form VI - Budget Summary, fill out one detailed budget for each year of requested funds, indicating on the form whether you are presenting the indirect costs based on the Federal overhead rate or State overhead rate. Our assumption is that line items other than indirect costs will remain the same whether funds come from State or Federal sources. If this assumption is not true for your budget, provide an explanation on the Budget Justification form.]* Agencies should include any internal costs associated with the management of project funds.

Attachment D. Budget and Budget Justification.

Subcontractor: Cache Creek, Level One, Task 11, Years 1 to 3

Subcontractor: Cache Creek, Level 1, Task 11, Years 1 to 3.

Proposed Budget

	(\$38.34/hour)		(\$52.10/hour)		(\$50.09/hour)		Watershed Coordinator (\$38.76/hour)		Licensed Applicator (costs estimated from previous invoices)	YEAR 1			YEAR 2		
	Hours	Total Cost	Hours	Total Cost	Hours	Total Cost	Hours	Total Cost		Labor	Contract	Labor	Contract	Labor	Contract
ERADICATION (1st year)															
Middle (contract)	6	\$230		\$0		\$0	6	\$233	\$9,360	\$230	\$8,393				
Clover/Alley (volunteer)	6	\$230		\$0		\$0	10	\$388	\$7,200	\$230	\$6,388				
Kelsey (contract)	6	\$230	8	\$417		\$0	6	\$233		\$647	\$233				
Adobe (volunteer)	2	\$77		\$0		\$0	2	\$78		\$77	\$78				
North Shore (contract/volunteer)	6	\$230		\$0		\$0	16	\$620	\$6,300	\$230	\$5,720				
MONITORING (3 years)															
Middle/Clover	48	\$1,840		\$0		\$0	48	\$1,860		\$1,840	\$620	\$1,840			
Kelsey	36	\$1,380	18	\$938		\$0	36	\$1,395		\$2,318	\$465	\$2,318			
Adobe	36	\$1,380	18	\$938		\$0	36	\$1,395		\$2,318	\$465	\$2,318			
North Shore	48	\$1,840	18	\$938		\$0	48	\$1,860		\$2,778	\$620	\$2,778			
INVENTORY (site information)															
Middle	16	\$613	16	\$834		\$0	8	\$310		\$1,447	\$310				
Clover/Alley	16	\$613	16	\$834		\$0	16	\$620		\$1,447	\$620				
HWY 20 Corridor	72	\$2,760	32	\$1,667		\$0	64	\$2,481							
St. Helena Creek/Dry Creek	32	\$1,227	32	\$1,667		\$0	32	\$1,240					\$2,894		
Clear Lake	80	\$3,067		\$0	32	\$1,603	64	\$2,481							
Kelsey Creek	56	\$2,147		\$0		\$0	48	\$1,860					\$2,147		
Adobe Creek	44	\$1,687	40	\$2,084		\$0	6	\$233					\$3,771		
Scotts Creek	16	\$613	40	\$2,084		\$0	40	\$1,550		\$2,697	\$1,550				
Arctview Training	16	\$613								\$613					
Database Management	60	\$2,300		\$0		\$0	16	\$620		\$767	\$207	\$767			
Plan writeup	60	\$2,300	16	\$834		\$0	16	\$620		\$3,134	\$620				
EOC	120	\$4,601	360	\$18,756		\$0	360	\$13,954		\$7,786	\$4,651	\$7,786			
Restoration/Revegetation	24	\$920	24	\$1,250		\$0	24	\$930		\$2,171	\$310	\$2,171			
Internal Admin	48	\$1,840	48	\$2,501		\$0	48	\$1,860		\$4,341	\$620	\$4,341			
	854	\$32,742	686	\$35,741	32	\$1,603	950	\$36,822	\$22,860	\$35,071	\$31,870	\$33,131			

MATERIALS	\$3,829
CONTRACTS	\$61,420
LABOR	\$70,086
TOTAL REQUEST	\$135,335

PARALLEL EFFORTS

F.C. ZONE 1	\$2,301		
F.C. ZONE 8	\$3,600		
WMA (SB 1740 Year 2/3 Work Plan)**	\$46,384		Applied for, application status unknown- January 1, 2002 --- June 30, 2003
WMA (SB 1740 Supplemental Project)**	\$13,395		Applied for, application status unknown- January 1, 2002 --- June 30, 2003
Natural Resources Conservation Service	\$900		The NRCS has dedicated 20 hours towards this proposed project (\$45.00/hr.)
Lake County CRMP volunteer efforts	\$10,410		It is estimated that 694 man hours will be dedicated to the eradication of Arundo donax during three years (\$15.00/hr.)
Estimated Match	\$76,990	36%	
CALFED REQUEST	\$135,335	64%	
Total Project Cost	\$212,325	100%	

** Note, Potential Weed Management Area funding component for Arundo donax

Attachment D: Budget and Budget Justification.
Subcontractor: Cache Creek, Level One, Task 11, Years 1 to 3
Budget Justification

Direct Labor Hours

Alex Straessle- Water Resources Specialist	850 hours
Tony Gallegos- Water Resources Program Manager	686 hours
Tom Smythe- Water Resources Engineer	2 hours
Skip Simkins- Clear Lake Lands Coordinator	32 hours

Volunteer Labor (Lake County CRMP groups)	694 hours
Natural Resources Conservation Service (in-kind)	20 hours

Total Hourly Rate

Alex Straessle- Water Resources Specialist	\$38.34/hour
Tony Gallegos- Water Resources Program Manager	\$52.10/hour
Tom Smythe- Water Resources Engineer	\$78.10/hour
Skip Simkins- Clear Lake Lands Coordinator	\$50.09/hour

Volunteer Labor (Lake County CRMP groups)	694 hours
Natural Resources Conservation Service (in-kind)	20 hours

Benefits

Included within the total hourly rate.

Travel

Travel is figured in to program categories.

Supplies and Expendables

Services or Consultants

Pestmaster Services- This licensed applicator will be used for the eradication of *Arundo donax*. Costs are estimated from previous invoices for Arundo eradication on a lump sum basis per number of sites.
(Flood Control Zone 8: Arundo donax control for 16 sites by the cut resprout and spray method \$6,000)

West Lake Resource Conservation District- The RCD will be working with the County through all phases of this project. Services are eradication, monitoring, site information, education outreach and coordination, investigation of restoration and revegetation options and assisting in the development of a management plan.

Equipment

A County boat will be used for Clear Lake shoreline inventories of Arundo donax.
A chipper will be made available for the treatment of Arundo canes.

Project Management

Project management costs were either figured into the estimated hours by task or figured separately as a project administration component. The project administration component considers that time which is used for overall grant related administration such as the processing of invoices for payment, quarterly reports and project specific questions. Project management tasks such as inspection of work, processing of subcontractor agreements and invoices, giving presentations and travel are estimated into each task separately.

Other Direct Costs

None.

Indirect Costs

Included in the total hourly rate.

Attachment D. Budget and Budget Justification.

Subcontractor: Cottonwood Creek/Ash Slough, Level One, Task 10, Years 1 to 3

Subcontractor: Cache Creek, Level 1, Task 11, Years 1 to 3.

	Direct Labor Hours	Salary	Benefits	Travel	supplies and Expendibles	Services or consultants	Equipment	Other Direct Costs	Total Direct Costs
Tasks									
GPS Mapping	60	720							
Equipment Operator	240	48000							
Herbicide Applicator (PCA)	240	5880							
Hand Removal labor	200	3000							
Herbicide					7200				
Aerial photo monitoring	2					160			
Permit fees						850			
Task Total	742	57600			7200	\$1,010			\$65,810
Coordination and Administration									
									\$0
YEAR ONE TOTAL	742	57600	0	0	7200	1010			\$65,810

	YEAR TWO								
	Direct Labor Hours	Salary	Benefits	Travel	supplies and Expendibles	Services or consultants	Equipment	Other Direct Costs	Total Direct Costs
Tasks									
GPS Mapping	20	240							
Herbicide Applicator (PCA)	40	980							
Herbicide					3600				
Aerial photo monitoring	2					\$160			
subtotal									
Task Total	62	1220			3600	\$160			\$4,980
Coordination and Administration									
									\$0
YEAR TWO TOTAL	62	1220	0	0	3600	160			\$4,980

	YEAR THREE							Other Direct Costs	Total Direct Costs
	Direct Labor Hours	Salary	Benefits	Travel	supplies and Expendibles	Services or consultants	Equipmen t		
Tasks									
GPS Mapping	20	240							
Herbicide Applicator (PCA)	40	980							
Herbicide					3600				
Aerial photo monitoring	2					160			
	subtotal								
Task Total	62	1220			3600	\$160			\$4,980
Coordination and Administration									\$0
YEAR THREE TOTAL	62	1220	0	0	3600	160			\$4,980

Attachment D. Budget and Budget Justification.
Subcontractor: Cottonwood Creek/Ash Slough, Level One,
Task 10, Years 1 to 3
Budget Justification

All applicants must complete this form for their proposals. Failure to answer these questions will result in the application not being considered for funding.

Direct Labor Hours. Provide estimated hours proposed for each individual.

GPS Mapping	Yr 1= 60 hrs	Yr 2=20 hrs	Yr 3 = 20 hrs
Equipment Operator	Yr 1 = 240 hrs		
Herbicide Operator:	Yr 1=240,	Yr 2=40 hrs	Yr3=40hrs
Hand Removal Crews	Yr 1 = 200 hrs		
TOTAL	YR1=740	YR 2=60	Yr 3=60hrs = 860

Probable Cost Share:

Herbicide Operator	Yr 1 =120hrs	Yr 2=120hrs	Yr3=120hrs = 360 hrs
Hand Removal Crews (Volunteers)	Yr 1= 200 hrs		

Total Cost Share 560 hrs

Salary. Provide estimated rate of compensation proposed for each individual.

GPS Mapping (\$ 12/hr)	Yr 1 \$720	Yr 2 \$240	Yr3 \$240
Equipment Operator (\$ 200/hr)	Yr 1 \$ 48,000		
Herbicide Operator (\$ 24.50/hr)	Yr 1 \$5,800	Yr 2 \$ 980	Yr 3 \$980
Hand Removal Crews (\$ 15 /hr)	Yr 1 \$3,000		
TOTAL	Yr 1 \$57,520	Yr 2 \$1,220	Yr3 \$1,220 = \$59,960

Probable Cost Share:

Herbicide Operator	Yr 1 = \$2940	Yr 2= \$2940	Yr3= \$2940 = \$8820 hrs
Hand Removal Crews Volunteers	Yr 1 200hrs @ \$16/hr = \$3,200		
TOTAL COST SHARE	\$12,020		

Benefits. Provide the overall benefit rate applicable to each category of employee proposed in the project.

Project Administrator:

Cost Share 340 hrs @ 22% of salary = $3.74 * 340 = 1,272$ *3years= **\$3,814.80**

Travel. Provide purpose and estimate costs for all non-local travel. **None**

Supplies & Expendables. Indicate separately the amounts proposed for office, laboratory, computing, and field supplies.

Herbicide (Rodeo): 180 gal. @ \$ 80/gal.

Yr1 90 gal \$7,200 ; Yr2 3.45gal \$3,600 Yr 3 45 gal \$3,600 = \$14,400

Probable Cost Share:

GPS equipment from USDA-NRCS \$1,000.

Digital Camera from USDA-NRCS \$500,

Computer from Chowchilla/Redtop RCD \$2,000 ,

Large Garbage Bin and hauling dumping costs \$5,000 Yr 1

TOTAL COST SHARE \$8,500

Services or Consultants. Identify the specific tasks for which these services would be used. Estimate amount of time required and the hourly or daily rate.

Dept. of Fish & Game Biological Assessment and permit fees \$850

Aerial Photo monitoring Yr 1, 2 & 3 = 2hrs@ \$80/hr = \$160/yr

TOTAL Yr 1 \$1,010 Yr 2 \$160 Yr3 \$160 = \$1330

Equipment. Identify non-expendable personal property having a useful life of more than one (1) year and an acquisition cost of more than \$5,000 per unit. If fabrication of equipment is proposed, list parts and materials required for each, and show costs separately from the other items. **None**

Project Management. Describe the specific costs associated with insuring accomplishment of a specific project, such as inspection of work in progress, validation of costs, report preparation, giving presentations, response to project specific questions and necessary costs directly associated with specific project oversight.

Project management 200 hrs@ \$17/hr=\$3,400.

Develop Work Plan 60 hrs @ \$17/hr= \$1,020.

Accounting 40 hrs @\$17/hr=\$680

Prepare Annual Reports 40 hrs@\$17/hr=\$680

Total Cost Share : \$5,780 for 3 years = \$17,340

Other Direct Costs. Provide any other direct costs not already covered. **None**

Indirect Costs.

Rent & Utilities for 3 years \$1.00/sq.ft. for 200' total = \$7,200

Public Participation-Lump Sum: Attend Meetings, Community Outreach, Newspaper

Articles \$5,000 * 3 years = \$15,000

ProbableCost Share TOTAL \$22,200

OVER-ALL TOTALS

GRANT \$ 79,690 COST SHARE \$63,906 (80%)

Attachment D. Budget and Budget Justification.

Subcontractor: Grey Lodge, Level One, Task 12, Years 1 to 3

Budget

BUDGET ITEM	RATE	UNITS	YEAR 1	UNITS	YEAR 2	UNITS
	per hr./unit	required	01 / 02	required	02 / 03	required
Direct Labor Costs						
<u>Fish and Game spray crew</u>						
Ground / Stalker / 3 man	IN-KIND \$60.00	60hr's	\$3,600.00	48hr's	\$2,880.00	36hr's
Aerial / Rodeo / 2 man	IN-KIND \$45.00	8hr's	\$360.00	8hr's	\$360.00	8hr's
Jones Flying Service Inc.	IN-KIND \$1,300.00	6hr's	\$7,800.00	5hr's	\$6,500.00	4hr's
Direct Salary and Benefits						
ADMINISTRATION						
<u>Deputy Commissioner</u>						
Standard Agreements	\$30.00	16hr's	\$480.00	8hr's	\$240.00	8hr's
Quarterly reports		24hr's	\$720.00	16hr's	\$480.00	16hr's
Annual report		24hr's	\$720.00	24hr's	\$720.00	24hr's
Public Education & Information		24hr's	\$720.00	24hr's	\$720.00	24hr's
<u>Ag. Comm. Staff Biologist</u>						
Survey	\$23.69	16 hr's	\$379.04	16 hr's	\$379.04	16 hr's
Monitoring		8hr's	\$189.52	8hr's	\$189.52	8hr's
<u>Clerical</u>						
Invoicing / Billing	\$15.69	8hr's	\$125.52	8hr's	\$125.52	8hr's
Benefits 25% of salary	IN-KIND					
Travel						
Vehicle and mileage	\$0.35	250 miles	\$87.50	250 miles	\$87.50	250 miles
Supplies / Materials / Acquisition Costs						
CHEMICAL						
Rodeo Herbicide	\$88.05	28 gal.	\$2,465.40	20 gal.	\$1,761.10	14 gal.
Stalker Herbicide	\$89.50	4 quarts	\$358.00	4 quarts	\$358.00	4 quarts
R-11 Adjuvant	\$20.00	4 gal.	\$80.00	3 gal.	\$60.00	2 gal.
SUPPLIES & OTHER EXPENDABLES						
Supplies: Office , Computer, Field, Presentatic	\$150.00	Year	\$150.00		\$150.00	
Service Contracts						
Mapping engineer Aid I	\$13.44					
GPS field time		60 hr's	\$806.40	40hr's	\$537.60	20hr's
GIS office time		80 hr's	\$1,075.20	60hr's	\$806.40	40hr's
Indirect Costs / Overhead:						

25% of direct cost:	\$2,126.65	\$1,666.17
Annual Total	\$22,393.23	\$18,070.85
less In-kind	\$2,260.56	\$9,740.00
Grant Required	\$10,633.23	\$8,330.85

BUDGET PLAN / BUTTE COUNTY WMA / ARUNDO CONTROL PROJECT / GR

Non-budget cost sharing

Volunteer Labor

Donated) Administrative Benefits 25% of salary = \$2,260.56

Donated Services (in-kind, e.g. % of agency staff time on project)

15 hours of Helicopter Pilots time

146 hours Department of Fish and Game staff time.

Donated Equipment (% of time agency equipment is used for project)

All required ground application equipment necessary

15 hours use of spray equipped Helicopter

Donated Supplies

Additional Eradication Funding Sources (non-CalFed, if any, that you are also using in your eradication work)

**Attachment D: Budget and Budget Justification.
Subcontractor: Grey Lodge, Level One, Task 12, Years 1 to 3
Budget Justification**

All applicants must complete this form for their proposals. Failure to answer these questions will result in the application not being considered for funding.

Budget Form Instructions

Direct Labor Hours. Provide estimated hours proposed for each individual.

Provided on the Budget Plan under "Direct Labor Costs" as an In-Kind Contribution.

Salary. Provide estimated rate of compensation proposed for each individual.

Provided on the Budget Plan under "Direct Salary and benefits".

Benefits. Provide the overall benefit rate applicable to each category of employee proposed in the project.

We are not seeking Benefit support under this grant. Provided on the Budget Plan as In-kind contribution.

Travel. Provide purpose and estimate costs for all non-local travel.

N/A, standard County vehicle mileage cost: \$0.35/ mile

Supplies & Expendables. Indicate separately the amounts proposed for office, laboratory, computing, and field supplies.

Office supplies: \$50.00/ year, Computer supplies \$50.00/ year, Field supplies: \$50.00/year.

Services or Consultants. Identify the specific tasks for which these services would be used. Estimate amount of time required and the hourly or daily rate. **Provided on the Budget Plan under "Service Contracts". Provided on the Budget Plan under "Direct Salary and benefits".**

Mapping Engineer for 300 hours over 3 years @ \$13.44/ hour

Equipment. Identify non-expendable personal property having a useful life of more than one (1) year and an acquisition cost of more than \$5,000 per unit. If fabrication of

equipment is proposed, list parts and materials required for each, and show costs separately from the other items. **None Required**

Project Management. Describe the specific costs associated with insuring accomplishment of a specific project, such as inspection of work in progress, validation of costs, report preparation, giving presentations, response to project specific questions and necessary costs directly associated with specific project oversight. **Provided on the Budget Plan under: “Direct Salary and benefits”.**

Under: Administration, Miscellaneous/ Other Direct Costs:
Public Education Program.

Other Direct Costs. Provide any other direct costs not already covered. **Standard County vehicle mileage cost: \$0.35/ mile. (Es t. 250 miles/ year.)**

Indirect Costs. Explain what is encompassed in the overhead rate (indirect costs). Overhead should include costs associated with general office requirements such as rent, phones, furniture, general office staff, etc., generally distributed by a predetermined percentage (or surcharge) of specific costs. *[CORRECTION: If overhead costs are different for State and Federal funds, note the different overhead rates and corresponding total requested funds on Form I - Project Information, Question 17a. On Form VI - Budget Summary, fill out one detailed budget for each year of requested funds, indicating on the form whether you are presenting the indirect costs based on the Federal overhead rate or State overhead rate. Our assumption is that line items other than indirect costs will remain the same whether funds come from State or Federal sources. If this assumption is not true for your budget, provide an explanation on the Budget Justification form.]* Agencies should include any internal costs associated with the management of project funds.

Project:LINDO CHANNEL NON-NATIVE ERADICATION

REVISED BUDGET: TASK 1 ADMIN/OUTREACH

Attachment D. Budget and Budget Justification.

Subcontractor: Lindo Channel, Level One, Task 14, Years 1 to 3

Budget

CSUC, Research Foundation				
Salaries	Personnel Name	Hours	Rate	Total
Project Director			54	0
Co-Director	Cooper-Carter	360	34	12,240
Riparian	Cole/Hubbel	0	40	0
RCD Assistant			18	0
Outreach Assistant	Strachan	215	18	3,870
Admin Asst	TBD		12	0
Student Assistants	TBD	0	12	0
Total Salaries		575		16,110
Fringe Benefits		Percent		
Project Director		15%	0	0
Co-Director	Cooper-Carter	38%	12,240	4,651
Riparian		34%	0	0
RCD Assistant		36%	0	0
Outreach Assistant	TBD	15%	3,870	581
Admin Asst	TBD	15%	0	0
Student Assistants	TBD	15%	0	0
Total Fringe				5,232
Total Salary and Fringe Costs				21,342
Other Direct Costs				
A. Operating Expenses				2,050
	Supplies		800	
	Printing		150	
	Postage		100	
	Phone/FAX		500	
	Presentation Materials		0	
	Tangible property		500	
	Other - Rental		0	
	Total Operating Expenses		2050	
B. Travel Expenses				400
	Personal Vehicle Expense		400	
	Vehicle Rental		0	
	Air Travel		0	
	Lodging and Per Diem		0	
	Conference Registrations		0	
	Other		0	
	Total Travel Expenses		400	
C. Consultants				0
			-	
			-	
Total Other Direct Costs				2,450
Total Direct Costs				23,792
Indirect Costs @ 20% TDC				4,758
TOTAL COSTS				28,550

MONTHS	HRS/WK
	1.0
36	10.0
36	0.0
36	0.0
4	12.4
4	0.0
36	

Project: LINDO CHANNEL NON-NATIVE ERADICATION
REVISED BUDGET: TASK 2 MAPPING AND ERADICATION

CSUC, Research Foundation				
Salaries	Personnel Name	Hours	Rate	Total
Project Director			54	0
Co-Director	Cooper-Carter	365	34	12,410
Riparian	Cole	165	40	6,600
RCD Assistant		0	18	0
Outreach Assistant	Strachan	300	18	5,400
Admin Asst	TBD	0	12	0
Student Assistants	TBD	100	12	1,200
Total Salaries		930		25,610
Fringe Benefits		Percent		
Project Director		15%	0	0
Co-Director	Cooper-Carter	38%	12,410	4,716
Riparian		34%	6,600	2,244
RCD Assistant		36%	0	0
Outreach Assistant	TBD	15%	5,400	810
Admin Asst	TBD	15%	0	0
Student Assistants	TBD	15%	1,200	180
Total Fringe				7,950
Total Salary and Fringe Costs				33,560
Other Direct Costs				
A. Operating Expenses				4,545
	Supplies		800	
	Printing		0	
	Postage		0	
	Phone/FAX		745	
	Presentation Materials		0	
	Tangible property		3000	
	Other - Rental		0	
	Total Operating Expenses		4545	
B. Travel Expenses				800
	Personal Vehicle Expense		800	
	Vehicle Rental		0	
	Air Travel		0	
	Lodging and Per Diem		0	
	Conference Registrations		0	
	Other		0	
	Total Travel Expenses		800	
C. Consultants				30,200
Sole Terra	Herbicide		3,200	
	Removal		24,000	
Mapping			3000	
Total Other Direct Costs				35,545
Total Direct Costs				69,105
Indirect Costs @ 20% TDC				13,821
TOTAL COSTS				82,926

MONTHS HRS/WK

18	2.0
18	12.0
12	3.2
4	0.0
4	17.3
36	0.0
12	1.9

Project:LINDO CHANNEL NON-NATIVE ERADICATION
REVISED BUDGET: TASK 3 - MONITORING

CSUC, Research Foundation				
Salaries	Personnel Name	Hours	Rate	Total
Project Director			54	0
Co-Director	Cooper-Carter	345	34	11,730
Riparian	Cole/Hubbel	200	40	8,000
RCD Assistant		0	18	0
Outreach Assistant	TBD	0	18	0
Admin Asst	TBD	0	12	0
Student Assistants	TBD	360	12	4,320
Total Salaries		905		24,050
Fringe Benefits		Percent		
Project Director		15%	0	0
Co-Director	Cooper-Carter	38%	11,730	4,457
Riparian		34%	8,000	2,720
RCD Assistant		36%	0	0
Outreach Assistant	TBD	15%	0	0
Admin Asst	TBD	15%	0	0
Student Assistants	TBD	15%	4,320	648
Total Fringe				7,825
Total Salary and Fringe Costs				31,875
Other Direct Costs				
A. Operating Expenses				4,200
	Supplies		1000	
	Printing		100	
	Postage		100	
	Phone/FAX		1200	
	Presentation Materials		0	
	Tangible property		1800	
	Other - Rental		0	
	Total Operating Expenses		4200	
B. Travel Expenses				3,000
	Personal Vehicle Expense		3000	
	Vehicle Rental		0	
	Air Travel		0	
	Lodging and Per Diem		0	
	Conference Registrations		0	
	Other		0	
	Total Travel Expenses		3000	
C. Consultants				0
Total Other Direct Costs				7,200
Total Direct Costs				39,075
Indirect Costs @ 20% TDC				7,815
TOTAL COSTS				46,890

MONTHS HRS/WK

18	4.0
18	14.0
18	2.6
4	0.0
4	0.0
36	0.0
12	6.9

Project: LINDO CHANNEL NON-NATIVE ERADICATION
REVISED BUDGET: TASK 4 FINAL REPORT

CSUC, Research Foundation				
Salaries	Personnel Name	Hours	Rate	Total
Project Director			54	0
Co-Director	Cooper-Carter	80	34	2,720
Riparian	Cole/Hubbell	0	40	0
RCD Assistant		0	18	0
Outreach Assistant	TBD	45	18	810
Admin Asst	TBD		12	0
Student Assistants	TBD	0	12	0
Total Salaries		125		3,530
Fringe Benefits		Percent		
Project Director	Holman	15%	0	0
Co-Director	Cooper-Carter	38%	2,720	1,034
Riparian		34%	0	0
RCD Assistant		36%	0	0
Outreach Assistant	TBD	15%	810	122
Admin Asst	TBD	15%	0	0
Student Assistants	TBD	15%	0	0
Total Fringe				1,155
Total Salary and Fringe Costs				4,685
Other Direct Costs				
A. Operating Expenses				2,200
	Supplies		1000	
	Printing		1000	
	Postage		200	
	Phone/FAX		0	
	Presentation Materials		0	
	Tangible property		0	
	Other - Rental		0	
	Total Operating Expenses		2200	
B. Travel Expenses				0
	Personal Vehicle Expense		0	
	Vehicle Rental		0	
	Air Travel		0	
	Lodging and Per Diem		0	
	Conference Registrations		0	
	Other		0	
	Total Travel Expenses		0	
C. Consultants				0
	Eradication	Sole Terra	-	
	Mapping	GIC	-	
Total Other Direct Costs				2,200
Total Direct Costs				6,885
Indirect Costs @ 20% TDC				1,377
TOTAL COSTS				8,262

MONTHS HRS/WK

4	2.0
6	6.0
6	4.0

Project:LINDO CHANNEL NON-NATIVE ERADICATION
REVISED BUDGET: SUMMARY

CSUC, Research Foundation					MONTHS	TOTAL HOURS	AVE HRS PER WK
Salaries	Personnel Name	Hours	Rate	Total			
Project Director	Holman	0	54	0	36	0	0.0
Co-Director	Cooper-Carter	1150	34	39,100	36	1150	7.4
Riparian	Cole	365	40	14,600	36	365	2.3
RCD Assistant		0	18	0	4	0	0.0
Outreach Assistant	Strachan	560	18	10,080	4.0	560	32.3
Admin Asst	TBD	0	12	0	36	0	0.0
Student Assistants	TBD	460	12	5,520	12	460	8.9
Total Salaries		2535		69,300			
Fringe Benefits		Percent					
Project Director	Holman	15%	0	0			
Co-Director	Cooper-Carter	38%	39,100	14,858			
Riparian		34%	14,600	4,964			
RCD Assistant		36%	0	0			
Outreach Assistant	TBD	15%	10,080	1,512			
Admin Asst	TBD	15%	0	0			
Student Assistants	TBD	15%	5,520	828			
Total Fringe				22,162			
Total Salary and Fringe Costs				91,462			
Other Direct Costs							
A. Operating Expenses				12,995			
	Supplies		3600				
	Printing		1250				
	Postage		400				
	Phone/FAX		2445				
	Presentation Materials		0				
	Tangible property		5300				
	Other - Rental		0				
	Total Operating Expenses		12995				
B. Travel Expenses				4,200			
	Personal Vehicle Expense		4200				
	Vehicle Rental		0				
	Air Travel		0				
	Lodging and Per Diem		0				
	Conference Registrations		0				
	Other		0				
	Total Travel Expenses		4200				
C. Consultants				30,200			
	Eradication	Sole Terra	3,200				
	Removal		24000				
	Mapping	GIC	3000				
Total Other Direct Costs				47,395			
Total Direct Costs				138,857			
Indirect Costs @ 20% TDC				27,771			
TOTAL COSTS				166,628			

TASK	DIRECT LABOR HOURS	DIRECT SALARY AND BENEFITS	SERVICE CONTRACTS	MATERIAL & ACQUISITION COSTS	MISC. & OTHER DIRECT	OVERHEAD & INDIRECT COSTS	TOTAL COST
1. Admin, Outreach, Permits	575	\$ 21,342	\$ -	\$ 2,050	\$ 400	\$ 4,758	\$ 28,550
2. Mapping, Eradication	930	\$ 33,560	\$ 30,200	\$ 4,545	\$ 800	\$ 13,820	\$ 82,925
3. Monitoring/Reveg Test Plots	905	\$ 31,875	\$ -	\$ 4,200	\$ 3,000	\$ 7,815	\$ 46,890
3. Final Report	125	\$ 4,685	\$ -	\$ 2,200		\$ 1,377	\$ 8,262
TOTAL	2535	\$ 91,462	\$ 30,200	\$ 12,995	\$ 4,200	\$ 27,770	\$ 166,627

Attachment D: Budget and Budget Justification.
Subcontractor: Lindo Channel, Level One, Task 14, Years 1 to 3
Budget Justification

All applicants must complete this form for their proposals. Failure to answer these questions will result in the application not being considered for funding.

Budget Form Instructions

Direct Labor Hours. Provide estimated hours proposed for each individual.

Carter – 1150 hours

Griggs/Hubbell/Cole – 365 hours

Lundberg (Mapping) - 86

Strachan – 560

Student Assistants - 460

Salary. Provide estimated rate of compensation proposed for each individual.

Carter - \$34

Griggs/Hubbell/Cole - \$40

Lundberg - \$35

Strachan - \$18

Student Assistants - \$12

Benefits. Provide the overall benefit rate applicable to each category of employee proposed in the project.

Salaried Employees – 34-38%

Students and part-time employees – 15%

Travel. Provide purpose and estimate costs for all non-local travel.

324 miles per month for the life of the contract.

Supplies & Expendables. Indicate separately the amounts proposed for office, laboratory, computing, and field supplies.

Office supplies	\$3600
Printing	\$1250
Postage	\$400
Phone/FAX	\$2445
Computing supplies, digital camera, field supplies	\$5300

Services or Consultants. Identify the specific tasks for which these services would be used. Estimate amount of time required and the hourly or daily rate.

Sole Terra Farming - \$24,000 for cutting and mulching - \$1000 per day for a crew of 8-12

Sole Terra Farming - \$3,200 for herbicide applications – Approximately \$1,000 per application

Equipment. Identify non-expendable personal property having a useful life of more than one (1) year and an acquisition cost of more than \$5,000 per unit. If fabrication of equipment is proposed, list parts and materials required for each, and show costs separately from the other items.

No such equipment will be used.

Project Management. Describe the specific costs associated with insuring accomplishment of a specific project, such as inspection of work in progress, validation of costs, report preparation, giving presentations, response to project specific questions and necessary costs directly associated with specific project oversight.

Project management costs are captured under the project administration line item. These tasks will be completed jointly between Carter and Strachan. Carter will oversee all contracting needs, budget allocations, cost verifications, work inspections, report development, presentations and will serve as the main point of contact. Strachan will assist in developing the various reports, help to over-see the on-the-ground crews and will attending coordinating meetings in Carter's absence. The total cost for project management is \$28,550.

Other Direct Costs. Provide any other direct costs not already covered.

No other costs to report

Indirect Costs. Explain what is encompassed in the overhead rate (indirect costs). Overhead should include costs associated with general office requirements such as rent, phones, furniture, general office staff, etc., generally distributed by a predetermined percentage (or surcharge) of specific costs. *[CORRECTION: If overhead costs are*

different for State and Federal funds, note the different overhead rates and corresponding total requested funds on Form I - Project Information, Question 17a. On Form VI - Budget Summary, fill out one detailed budget for each year of requested funds, indicating on the form whether you are presenting the indirect costs based on the Federal overhead rate or State overhead rate. Our assumption is that line items other than indirect costs will remain the same whether funds come from State or Federal sources. If this assumption is not true for your budget, provide an explanation on the Budget Justification form.] Agencies should include any internal costs associated with the management of project funds.

The indirect rate charged by the Research Foundation for all state contracts is 20%. These fees are those costs that cannot by their nature be specified on a project-by-project basis in the same way that line item direct costs can. Generally, indirect costs are those that support project activities, as compared to those that are directly related to specific project tasks. Universities establish an indirect cost rate with the Federal Government by following the appropriate provisions of OMB Circular A-21. This circular was officially modified and reissued on May 8, 1996, which, among other things, changed the term "indirect costs" to "Facilities and Administrative (F&A) Costs." The circular spells out two methods for determining such costs. We use the "Simplified Method" for institutions with less than \$10 million in awards annually from the Federal Government. Currently, we have two rates approved by our lead Federal agency, Health and Human Services: 45% of salaries and wages for on-campus projects and 20% of salaries and wages for off-campus projects. May Wong (415-556-1704) is our contact and can provide verification of our rate which her office approves after reviewing our financial statements.

**Attachment D. Budget and Budget Justification.
Subcontractor: USDA, David F. Spencer ARS
Level Three, Task 16, Years 1 to 3
Budget**

Item	1st Year	2nd Year	3rd Year	Total
PGR, Step 1	\$32,000	\$32,960	\$33,949	\$98,909
Fringe @29%	\$9,280	\$9,558	\$9,845	\$28,684
Student (8\$ /hr)	\$9,600	\$9,600	\$4,800	\$24,000
Supplies	\$3,000	\$2,500	\$2,500	\$8,000
Plant ID @ \$30 each	\$7,500	\$4,500	\$3,000	\$15,000
Travel	\$2,000	\$2,000	\$2,000	\$6,000
sub Total	\$63,380	\$61,118	\$56,094	\$180,592
Indirect @ 11 %	\$6,972	\$6,723	\$6,170	\$19,865
Total	\$70,352	\$67,841	\$62,264	\$200,458

**Attachment D. Budget and Budget Justification.
Subcontractor: USDA, David F. Spencer ARS
Level Three, Task 16, Years 1 to 3
Budget Justification**

All applicants must complete this form for their proposals. Failure to answer these questions will result in the application not being considered for funding.

Budget Form Instructions

Direct Labor Hours. Provide estimated hours proposed for each individual.

PGR, Step 1, 2000 hours / year for 3 years equals 6000 hours.

Student Assistants II, 1200 hours / year for 2 and 600 hours / year for 1 year equals 3000 hours.

Salary. Provide estimated rate of compensation proposed for each individual.

PGR, Step 1, \$31,500 for year 1, \$32,445 for year 2, and \$33,418 for year 3.

Student Assitant II \$8 / hour.

Benefits. Provide the overall benefit rate applicable to each category of employee proposed in the project.

PGR, Step 1, benefits are calculated at 29%

Student Assitant II, no benefits are provided

Travel. Provide purpose and estimate costs for all non-local travel.

Travel will be to and from sampling sites located from Williams, CA to Madera, CA. It is estimated that \$2000 / year will cover gas, vehicle repair, per diem, and lodging expenses. Most visits will be completed in 1 day.

Supplies & Expendables. Indicate separately the amounts proposed for office, laboratory, computing, and field supplies.

Expendable supplies in the amount of \$3000 will be allocated approximately at \$400 for laboratory supplies, and \$2600 for field supplies in the first year. Amounts requested in years 2 and 3 (\$2500 / year) will follow the same proportion.

Services or Consultants. Identify the specific tasks for which these services would be used. Estimate amount of time required and the hourly or daily rate.

The UC Davis Herbarium charges \$30 to identify an unknown plant sample. The budget include \$7500 during year 1, \$4500 during year 2, and \$3000 during year 3 to pay for this service. No other services or consultants will be used.

Equipment. Identify non-expendable personal property having a useful life of more than one (1) year and an acquisition cost of more than \$5,000 per unit. If fabrication of equipment is proposed, list parts and materials required for each, and show costs separately from the other items.

NONE

Project Management. Describe the specific costs associated with insuring accomplishment of a specific project, such as inspection of work in progress, validation of costs, report preparation, giving presentatons, reponse to project specific questions and necessary costs directly associated with specific project oversight.

Project management relating to the collection and interpretation of the scientific data collected to test hypotheses 1 to 4 will be conducted by Dr. David Spencer. There is no additional charge for this.

Other Direct Costs. Provide any other direct costs not already covered.

NONE

Indirect Costs. Explain what is encompassed in the overhead rate (indirect costs). Overhead should include costs associated with general office requirements such as rent, phones, furniture, general office staff, etc., generally distributed by a predetermined percentage (or surcharge) of specific costs. *[CORRECTION: If overhead costs are different for State and Federal funds, note the different overhead rates and corresponding total requested funds on Form I - Project Information, Question 17a. On Form VI - Budget Summary, fill out one detailed budget for each year of requested funds, indicating on the form whether you are presenting the indirect costs based on the Federal overhead rate or State overhead rate. Our assumption is that line items other than indirect costs will remain the same whether funds come from State or Federal sources. If this assumption is not true for your budget, provide an explanation on the Budget Justification form.]* Agencies should include any internal costs associated with the management of project funds.

The United States Department of Agriculture, Agricultural Research Service, charges a standard overhead rate of 11%.

Attachment D. Budget and Budget Justification
Subcontractor: EDAW. Level Four, Task 17, Years 1 to 3
Budget

Budget: Environmental Compliance Documentation and Securing Permits				
Document/Permit	Number Required	Unit Cost	Total Cost	Estimated Hours
CEQA/NEPA	8	\$4,000	\$32,000	376 @ \$85/hour
Section 401	5	\$2,000	\$10,000	118 @ \$85/hour
Section 404	5	\$10,000	\$50,000	588 @ \$85/hour
Section 1600	5	\$8,000	\$40,000	470 @ \$85/hour
USFWS/NOAA	9	\$5,000	\$45,000	529 @ \$85/hour
Total			\$177,000	2082 @ \$85/hour

**Attachment D. Budget and Budget Justification
Subcontractor: EDAW. Level Four, Task 17, Years 1 to 3
Budget Justification**

Environmental Compliance Documentation and Permitting Needs										
Watershed Partner	CEQA CAT EX	CEQA Lead Agency	NEPA CAT EX or FONSI	NEPA Lead Agency	401	404	1600	USFWS	NOAA	Other
Existing Partners:										
Napa River	X	CDFG or local	NA	NA	X	X	O	X	X	Air Quality Board Permit
San Francisquito Creek	X	CDFG or local	NA	NA	NA	NA	O	X	X	
Sonoma Creek	X	CDFG or local	NA	NA	NA	NA	O	X	X	
Putah Creek	O	Solano Co. Water Agency	NA	NA	NA	NA	O	X	X	
Walnut Creek	X	CDFG or local	NA	NA	NA	NA	O	X	X	
New Partners:										
American River	X	Sacramento City Dept. of Parks and Recreation	NA	NA	NA	NA	X	O	O	
Cottonwood Creek	X	Chowchilla/Redtop RCD	NA	NA	X	X	X	X	X	Conditional Use Permit
Upper Cache Creek	X	Lake Co. Community Development Dept.	NA	NA	X	X	X	X	X	Grading Permit
Grey Lodge Wildlife Area	O	CDFG	NA	NA	NA	NA	NA	O	NA	CA Restricted Materials Permit (Obtained)
San Joaquin River	X	CDFG or local	X	Bureau of Reclamation	X	X	X	X	X	
Lindo Channel	NA	City of Chico (if required)	NA	NA	X	X	X	X	X	
Total Required:	8		2		5	5	5	9	9	

Notes:
NA = Not applicable
O = Obtained
X = Needed

Subtasks for Level Four—Programmatic Permitting

Subtask 1. Coordination with Regulatory Agencies/Development of Permitting Approach

Under this task, EDAW would work with TAdN, the proposed partners, and the regulatory agencies to determine the best compliance and permitting strategy for the proposed project, including the development of environmentally protective protocols for arundo abatement activities. The project area spans multiple jurisdictions (i.e., San Francisco/ Sacramento Districts of the USACE, several DFG regions, several RWQCB regions) and it is unknown at this time if one jurisdiction would take the lead for multiple project sites, or if multiple applications to different Districts would be required. Likewise, it would be determined if one “umbrella” compliance and permitting approach would be preferable or if a watershed-by-watershed approach would be more feasible. The appropriate lead agencies for CEQA and NEPA compliance, and the permit applicants for CWA Section 404 and 401, and DFG Section 1600 Streambed Alteration Agreements would also be determined. The outcome of Task 1 will affect the approaches taken in Tasks 2–11 below.

Subtask 2. Prepare CEQA and NEPA Compliance Documents

Under this task, EDAW would work with the respective partners for each watershed or TAdN to prepare the administrative draft, public draft, administrative final, and final environmental compliance documents assumed to be a single, joint document. Other services included would be coordination with the lead agencies, TAdN and the partners, project meetings, project management, budget administration, and site visits as required. It is assumed that up to three meetings will be required during the environmental document preparation. It is also assumed that the project description will be compiled collaboratively by EDAW and the partners. The partners would be responsible for collecting and providing EDAW with background environmental documentation and resources for the project area, including previous environmental documentation, aerial photographs, maps, and results of previous resource inventories.

Subtask 3. Preparation of Nationwide Permit 27 Application under Section 404 of the Clean Water Act

It is assumed the proposed Arundo removal project would qualify for a U.S. Army Corps of Engineers (USACE) Nationwide 27 permit covering habitat restoration activities. EDAW will prepare the Nationwide 27 permit application and request a Letter of Permission under the Rivers and Harbors Act for submittal to USACE. Depending on the outcome of coordination with the regulatory agencies in Task 1, a simple application package may be prepared for each watershed/partner or a joint “umbrella” application may be filed. The application package(s) will consist of form Eng 4345, a project description, the project purpose, USACE jurisdiction on the project site, potential impacts and proposed mitigation if required. As part of the Nationwide permit application, a mitigation plan is typically required to address potential project impacts. The need and scope of this plan will be determined through consultation with the USACE regulatory personnel and a scope and cost estimate will be prepared by EDAW at that time. Therefore, the cost for developing a mitigation plan is not included in the cost estimate for this task.

Subtask 4. Preparation of Application for a Streambed Alteration Agreement

All diversions, obstruction, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake in California that supports wildlife resources is subject to the regulations of the California Department of Fish and Game (DFG) pursuant to Section 1600 through 1603 of the Fish and Game Code. Sections 1601 to 1603 state that it is unlawful for any person to substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake designated by DFG, or use any material from the streambed, without first notifying DFG of such activities. A DFG Streambed Alteration Agreement must be obtained for any project that would result in impacts to a river, stream, or lake. EDAW will submit a completed 1601/03 Streambed Alteration Agreement application to DFG for proposed activities that would result in the potential alteration of the bed and bank of the involved streams. Depending on the results of Task 1, a single permit application may be submitted for each watershed, or one "umbrella" application covering all proposed activities may be submitted. A certified CEQA document will be required to accompany the Streambed Alteration Agreement application. This proposal assumes that DFG will permit the entire 26 miles of lower Putah Creek and its tributaries as a single project and will use the CEQA document prepared in Task 1 for its agreement review.

Subtask 5. Preparation of Application Package for Regional Water Quality Control Board Clean Water Certification

The Regional Water Quality Control Board (RWQCB) promulgates and enforces water quality standards to protect water quality in California. The RWQCB has jurisdiction over all Waters of the United States, including wetlands. Most projects requiring a Section 404 permit also require Clean Water Certification.

Once USACE has verbally approved the project, EDAW will send a letter(s) of application to the RWQCB for water quality certification. Depending on the outcome of Task 1, a simple letter for all watersheds may be sent, or a separate letter may be sent for each partner watershed. It is assumed that a consultation meeting will not be needed with the RWQCB. A certified CEQA document will be required to accompany the water quality certification application.

Subtask 6. Department of Water Resources (DWR) Reclamation Board Encroachment Permit

The reclamation board has jurisdiction over levees along rivers and streams in California. Work within the leveed downstream segment of any stream would likely require an Encroachment Permit from the Reclamation Board. A certified CEQA document will be required to accompany the Encroachment Permit application. Typical concerns of the Reclamation Board are increases in roughness in the channel or any activities which may cause maintenance problems. If determined necessary during Tasks 1 and 2, EDAW will prepare an application for an Encroachment Permit for work within the leveed lower reaches of the respective streams.

Subtask 7. Coordination with USFWS Regarding Federally Listed and Proposed Species

Compliance with the federal Endangered Species Act (ESA) is required for project implementation. Under this task, EDAW will informally consult with USFWS regarding federally listed and proposed species. It is assumed that impacts to the species can be avoided through timing and protective measures, and that the informal consultation would suffice.

Subtask 8. Informal Consultation with NOAA Fisheries Regarding Listed Fish Species

Based on EDAW's understanding of the project, it is assumed the project would not take or adversely effect federally or state-listed fish species. To confirm this assumption, EDAW biologists will conduct informal consultation with the NOAA Fisheries. This informal consultation would include initial coordination with NOAA Fisheries to determine potential project effects on listed species, and consultation with species experts to determine the need for onsite surveys or the need for formal consultation under Section 7 of the Endangered Species Act. This proposal assumes that take avoidance is feasible and does not include formal Section 7 consultation with NOAA Fisheries.

Subtask 9. Coordination with DFG Regarding State-Listed and Proposed Species

Compliance with the DFG and the California Endangered Species Act (CESA) is required for project implementation. Under this task, EDAW will informally consult with CDFG regarding state-listed and proposed species. It is assumed that impacts to the species can be avoided through timing and protective measures and that the informed consultation would suffice.

Subtask 10. Cultural Resources Compliance

Federal actions, including the issuance of a Section 404 CWA permit, require compliance with Section 106 of the National Historic Preservation Act. Under this task, Section 106 compliance would be obtained by EDAW in support of the 404 application process. The presence of significant cultural resources in the project areas would be assessed through a record search at the North Central Information Center of the California Historical Resources Information System, and through contact letters with the Native American Heritage Commission (NAHC), the State Historic Preservation Officer (SHPO), and individuals or organizations that may have knowledge of or interest in cultural resources at the project sites.

Subtask 11. Resource Assessment

Many permitting requirements are driven by the presence of sensitive biological resources (i.e., special-status species, wetlands) in the project areas. The presence of sensitive biological resources will be determined through:

- ?? database searches (California Natural Diversity Data Base, California Native Plant Society Electronic Inventory)
- ?? review of environmental compliance documents for the area (if available)
- ?? review of previous mapping efforts
- ?? interviews with knowledgeable individuals

Where necessary to fulfill permitting requirements, the available documentation will be supplemented by field surveys. Sensitive resources surveys will be conducted in coordination with partners to maximize efficiency in acquiring field data.